

# A Bibliometric Analysis of Research at the Nexus of Climate Change, Human Mobility, and Human Rights



The Raoul Wallenberg Institute of Human Rights and Humanitarian Law (RWI) is a research and academic institution committed to human rights education and development across the world. Informed by over 30 years of research and direct engagement experience, our current organizational strategies focus on four interrelated themes: Business and Human Rights, Human Rights and the Environment, Non-discrimination and Inclusion, and Access to Justice. Headquartered in Lund, Sweden, RWI works through a network of regional and country offices around the globe, including the Regional Asia Pacific Office (RAPO) in Jakarta, Indonesia.

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Photo: "Women standing on dry soil and fishing gear, global warming and water crisis"  
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## Executive Summary

Climate change affects people and communities in a variety of ways. It can negatively impact elements of their livelihoods, health, and safety, as well as other areas, shaping their decisions on whether to stay, or try and find a better place to live by moving. Climate change has already altered the magnitude and frequency of extreme weather, increasing vulnerability to disasters and resulting in widespread social, economic, and environmental losses. The Internal Displacement Monitoring Centre (IDMC) stated that 22.3 million people were displaced by weather-related disasters, such as floods and storms, in 2021. There is no universally agreed definition of climate-related human mobility or displacement, but it is accepted that the terminology broadly refers to the movement of people driven by sudden or progressive changes in the weather or climate, including temporary and permanent, seasonal and singular, and voluntary and forced movement.

Traditionally, climate change and the responses to them have been approached as ecological and environmental problems. It is only relatively recently that mainstream conceptions of climate change have broadened to include considerations of human rights. Although there is an emerging field of research and publications on the human rights implications of climate-related displacement, in the mainstream climate change and disaster-related displacement discourse, human rights often remain a peripheral concern. This is a rather unique condition because human rights have always been at the centre of displacement discourse, particularly in regard to conflict-related displacement. In contrast, most research approaches climate-related displacement using a risk-centric perspective. This approach perceives human mobility as a response to the risks posed by climate change and disaster incidents, giving more attention to the push factors – that drive people to move from a location, instead of the movement itself, the destination, or those unable to move.

Given the abovementioned context, the Raoul Wallenberg Institute of Human Rights and Humanitarian Law (RWI) has developed this bibliometric analysis of existing literature at the nexus of work on climate change, human mobility, and human rights. The report has three objectives: 1) to analyze the existing state of knowledge in the fields of climate change, human mobility, and human rights (including more specific themes such as displacement, gender equality, and social inclusion), in the context of the Asia Pacific region; 2) to identify and assess the research gaps and emerging trends in the fields of climate change, human mobility, and human rights (including more specific themes such as displacement, gender equality, and social inclusion), in the context of the Asia

Pacific region; and 3) to identify the research outlook and possible avenues for research in the field of climate change, human mobility, and human rights (including on more specific themes such as displacement, gender equality, and social inclusion), in the context of the Asia Pacific region. A draft of this report was presented and discussed during the Asia Pacific Conference on Climate Change, Human Mobility, and Human Rights (CCHMHR) Nexus (hereinafter the APANDD Conference) that was conducted by RWI in October 2022. This report incorporates findings and recommendations from this conference.

The report consists of five chapters. **Chapter 1** provides the background of the report development, research objectives, and research questions. **Chapter 2** describes the literature review methodology of the report. In short, the report adopts the Preferred Reporting Items for Systematic Review and Meta-analysis (PRISMA) as the main literature review steps and applies the Framework for Integrating Human Rights and Gender Equality (FIRE) as the conceptual framework for literature selection and review. To frame the climate change, human mobility, and human rights nexus literature review, we combine the substance of FIRE with the climate-risk concept outlined by the Intergovernmental Panel on Climate Change (IPCC) in its 5<sup>th</sup> Assessment Report. Therefore, the report encompasses any climate mitigation actions, including greenhouse gas reduction, as well as actions to reduce climate risk and impacts. To display empirical links between the two concepts, we limit the scope of our literature selection to climate actions involving the following types of human mobility: displacement, migration, planned relocation, and immobility. The first three are reflective of the Agenda for the Protection of Cross-Border Displaced Persons in the Context of Disasters and Climate Change (The Nansen Initiative, 2015), while the fourth category, immobility, is included to acknowledge the recent wave of literature on barriers to mobility or active choices by communities not to move. This review frame guided the utilization of relevant keywords that were used to scrape research publications discovered from Web of Science, Google Scholar, and CARI! Engine (automatically sourced from Scopus, Directory of Open Access Journal, and Portal Garuda directories). The initial search yielded 7,056 research publications, and upon following the literature selection steps and concentrating on the Asia Pacific, the report focuses on the final 188 sources that met all selection criteria.

**Chapter 3** provides an overview of climate change, human mobility, and human rights in the Asia Pacific. It shows the history and advancement of global key instruments that address the CCHMHR nexus as well as climate change and displacement statistics in the region. **Chapter 4** presents the findings of the literature review, showing the knowledge landscape of Asia Pacific-focused research on the CCHMHR nexus, as well as a sub-regional overview. Further findings on knowledge entrepreneurs in the CCHMHR space, individual case



studies of climate change adaptation, research patterns, trends, and gaps, and a section on gender and social inclusion are also presented in this chapter.

**Chapter 5** outlines the conclusions and recommendations coming from the review. Building upon the overview of the CCHMHR nexus and its knowledge landscape, **nine conclusions** are proposed. The report highly recommends better systematic research and research outreach steps at international, regional, national, and local levels. It also stresses the importance of pioneering a strategic research collaboration using a FIRE-based analysis to generate empirical studies across levels, from global to local, and especially in the context of planned relocations.

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## List of Abbreviations and Terminologies

<b>AFOLU</b>	: Agriculture, Forestry, and Other Land Use
<b>APANDD</b>	: Asia Pacific Academic Network on Disaster Displacement
<b>CCA</b>	: Climate Change Adaptation
<b>CCIA</b>	: Climate Change Impacts and Adaptation
<b>CCM</b>	: Climate Change Mitigation
<b>CCHMHR</b>	: Climate Change, Human Mobility, and Human Rights
<b>COP</b>	: Conference of Parties
<b>Displacement</b>	: The primarily forced movement of a person
<b>DOAJ</b>	: Directory of Open Access Journal
<b>DRM</b>	: Disaster Risk Management
<b>DRR</b>	: Disaster Risk Reduction
<b>ENEA</b>	: East and Northeast Asia
<b>FIRE</b>	: Framework for Integrating Human Rights and Equality
<b>GHG</b>	: Greenhouse Gas
<b>HM</b>	: Human Mobility
<b>Human mobility</b>	: Umbrella term that refers to all aspects of the movement of people
<b>HR</b>	: Human Rights
<b>IDKU</b>	: Indonesia Disaster Knowledge Update
<b>IDMC</b>	: Internal Displacement Monitoring Centre
<b>IDP</b>	: Internally Displaced Person
<b>Immobility</b>	: The state of not being willing and/or able to move
<b>IPCC</b>	: Intergovernmental Panel on Climate Change
<b>LGBTQ+</b>	: Lesbian, Gay, Bisexual, Transgender, Queer, and/or Questioning
<b>Migration</b>	: The primarily voluntary movement of persons
<b>NCA</b>	: North and Central Asia
<b>NDC</b>	: Nationally Determined Contribution
<b>OHCHR</b>	: The Office of the High Commissioner for Human Rights
<b>PRISMA</b>	: Preferred Reporting Items for Systematic Review and Meta-analysis
<b>REDD</b>	: Reducing Emissions from Deforestation and forest Degradation
<b>Refugee</b>	: People who have fled war, violence, conflict or persecution, and have crossed an international border to find safety in another country
<b>Relocation</b>	: Process of settling persons or communities to a new location

<b>RWI</b>	: The Raoul Wallenberg Institute of Human Rights and Humanitarian Law
<b>SEA</b>	: Southeast Asia
<b>SIDS</b>	: Small Islands Developing States
<b>SLR</b>	: Systematic Literature Review
<b>SSWA</b>	: South and Southwest Asia
<b>TFD</b>	: Task Force for Displacement
<b>UN</b>	: United Nations
<b>UNFCCC</b>	: The United Nations Framework Convention on Climate Change
<b>UNGA</b>	: United Nations General Assembly
<b>UNHCR</b>	: The United Nations High Commissioner for Refugees
<b>UNHRC</b>	: The United Nations Human Rights Council
<b>UPR</b>	: Universal Periodic Review
<b>WIM</b>	: The Warsaw International Mechanism for Loss and Damage
<b>WoS</b>	: Web of Science



1.

# Introduction

Photo: Landscape of building ruins and bare trees in the water under a cloudy sky on a gloomy day

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## 1.1 Background

Climate change affects people and communities in a variety of ways. The most visible climate change impacts are those that directly change the landscapes that people and communities have traditionally inhabited, such as sea level rise (Strauss et al., 2021), more frequent flooding (Morrissey et al., 2021; Västilä et al., 2010), and loss of biodiversity (Abate & Kronk, 2013; Betzold & Flesken, 2014). Such changes have subsequently raised concerns about how this affects the livelihoods, health, and safety of individuals and communities – and from this may shape their decisions to remain or to move (Bardsley & Hugo, 2010; Kaczan & Orgill-Meyer, 2020). Climate change has already changed the magnitude and frequency of extreme weather events, which has in turn increased global vulnerability to disasters and the widespread social, economic, and environmental losses associated with this. The Internal Displacement Monitoring Centre (IDMC) stated that in 2021, 22.3 million internal displacements were triggered by climate-related hazards like floods and storms (IDMC, 2022). Although there is no universally agreed definition of climate-related human mobility or displacement, the terminology broadly refers to the movement of people driven by sudden or progressive changes in the weather or climate. This includes movement that is temporary and permanent, seasonal and singular, voluntary and forced (Wilkinson et al., 2016).

Traditionally, climate change, and the responses to it, have been approached as an ecological and environmental problem (Bodansky, 2009). Only recently have attitudes shifted towards considering climate change as a human rights issue. Although there is an emerging trend of research on the human rights implications of climate-related displacement, human rights have remained a peripheral concern in the mainstream climate change or disaster-related displacement discourse (Naser, 2010). This indicates that although human rights have always been at the core of displacement discourse – and particularly conflict-related displacement – its connection with the issue of climate change has often been overlooked (Roht-Arriaza, 2009). An exception that shows how important human rights are for displacement are the 1998 Guiding Principles on Internal Displacement. The Guiding Principles expanded the definition of internal displacement to include those forced to move due to environmental hazards and are firmly grounded in existing international human rights and humanitarian law. Climate-related displacement can potentially affect all basic human rights protected under United Nations (UN) conventions and treaties. This includes the rights laid out in the International Covenant on Civil and Political Rights, International Covenant on Economic, Social and Cultural Rights, Convention on the Rights of the Child, and the Convention for the Elimination of All Forms

of Discrimination against Women (Manou & Mihr, 2017). In response, the UN Office of the High Commissioner for Human Rights (OHCHR) (2009) in its report to the UN Human Rights Council (UNHRC) recognized the relationship between climate change and human rights. The report acknowledges that while universal human rights treaties do not specifically refer to the right to a safe and healthy environment, the UN treaty bodies all recognize the intrinsic link between the environment and the realization of a range of human rights (OHCHR, 2009).

This report and the subsequent developments in various international settings helped facilitate the UN General Assembly (UNGA) to finally recognize the impacts of climate change as one of the greatest human rights challenges, along with the unsustainable management and use of natural resources and biodiversity loss, the global state of pollution, and the unsound management of chemicals and waste. This recognition became the basis for the adoption of the right to a healthy environment (UN General Assembly, 2022). The triple planetary crisis, as these challenges are commonly referred to, may create significant barriers to the “effective enjoyment of all human rights” (Seck, 2022), and as UNGA resolution (A/76/L.75) reaffirms, “all human rights are universal, indivisible, interdependent and interrelated”. As such, the adoption of this resolution may further entrench the importance of human rights-based approaches to climate change issues.

Most research approaches climate-related displacement from a risk-centric perspective, meaning human mobility is perceived as a response to risks posed by climate change and disasters (Mattar & Mbakwem, 2018; Wilkinson et al., 2016). This means more attention is given to push factors that drive people to move, rather than to the movement itself, the destination, or to those who are unable to move. Even here, this work has commonly focused narrowly on how casualties and economic loss caused by disasters drive people to flee (Wilkinson et al., 2016). This risk-centric approach tends to simplify human mobility as an adaptation strategy to diversify livelihood and enhance household resilience. It also arguably fails to capture the multifaceted factors underlying decisions to move, such as the mobility patterns, duration, types, and destinations, as well as social inequalities around gender, age, or disability. (Chumky et al., 2022). Thus, research on climate and disaster-related displacement needs to include a more people-centred approach, using lenses of gender equality and intersectionality to better understand how mobility impacts people across the community. Current work in this space has identified the potential for further research and practice development. For example, Atapattu (2020) notes that “there are signs that climate negotiators seem finally to have woken up to the reality of climate displacement” and concludes that intensifying the planning process, which requires input from research publications to provide alternative strategies. Mosneaga (2022b) also notes that “a closer at look at national policies

and operational approaches reveals that this more nuanced understanding of disasters and displacement is lacking in practice.”

Furthermore, a disproportionate amount of focus is given to mobility or migration driven by rapid-onset disasters. This is likely driven by several factors, including how global disaster data and its effects are categorised. For instance, rapid-onset incidents usually cause immediate and apparent physical damage, which can be easily attributed to the causal event. In slow-onset events, this causal relationship is harder to establish (Zaidi, 2018). The complex interaction between gradual slow-onset events and human (im)mobility, either by forcing people to flee their homes or constraining their ability to move, requires more attention.

## 1.2 Review objectives and research questions

As the effects of climate change are more readily felt, a heightened need has emerged for research and practice that exists at the intersection of work on climate change, human mobility, and human rights. Practical recent developments towards this goal have culminated in the adoption of the right to a healthy environment by the UNGA. This provides further impetus to address the nexus of climate change, human mobility, and human rights. The resolution (A/76/L.75) specifically reaffirms that this right is “related to other rights and existing international law” and promotes “the full implementation of the multilateral environmental agreements under the principles of international environmental law.” OHCHR (2009) have acknowledged that the application of human rights to climate change faces several difficulties, such as: the long and complex chain of process between actions that produce greenhouse gas (GHG) emissions and the resulting climate change-related impacts; the extraterritorial application of human rights law; and the paradox between the ‘future-oriented’ nature of climate change impacts *vis a vis* post-harm establishment of human rights violations (Cima, 2022). As such, the adoption of the right to a healthy environment opens yet another window of opportunity for further knowledge development in various interdisciplinary approaches.

Given the aforementioned context, the Raoul Wallenberg Institute of Human Rights and Humanitarian Law (RWI) has taken the initiative to develop a literature review that uses bibliometric analysis to create a snapshot of the state of knowledge on the nexus of climate change, human mobility, and human rights, the research gaps that remain, and emerging trends in the field. Within this, more specific themes such as displacement, gender equality, and social inclusion are consciously included. This literature review will be used as a guideline for the Asia Pacific Academic Network on Disaster Displacement (APANDDD) in conducting its future research.

The literature review is designed with three research objectives and corresponding research questions in mind, as seen in the table below. This research was primarily conducted through a desk-based systematic review, primarily applying bibliometric analysis to retrieve and analyze works of literature related to climate change, human mobility, and human rights.

Table 1. Research objectives and research questions

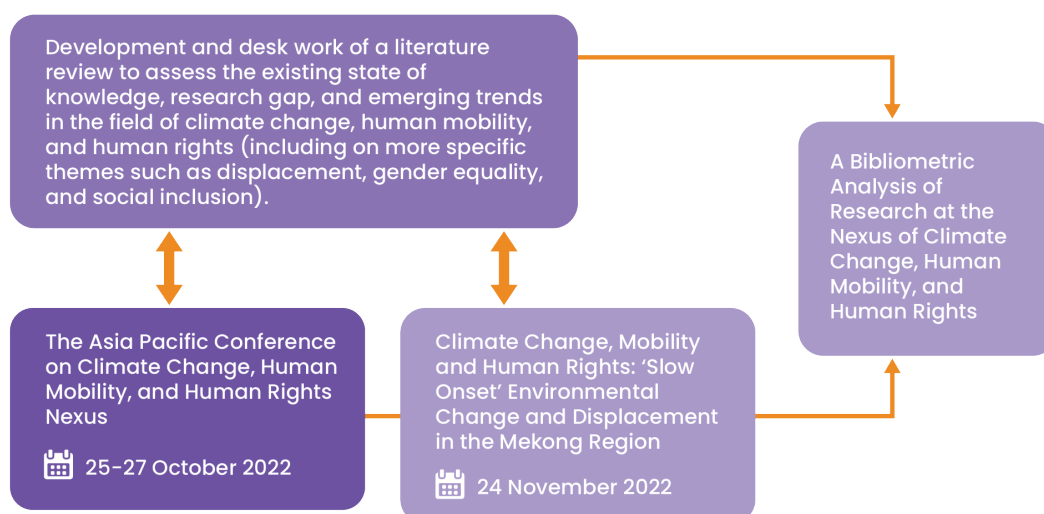
Research objectives	Research questions
<p>1. To analyze <b>the existing state of knowledge</b> in the field of climate change, human mobility, and human rights (including more specific themes such as displacement, gender equality, and social inclusion), in the context of the Asia Pacific region.</p>	<p>1. What is <b>the existing state of knowledge</b> in the field of climate change, human mobility, and human rights (including on more specific themes such as displacement, gender equality, and social inclusion), in the context of the Asia Pacific region?</p>
<p>2. To identify and assess <b>the research gaps and emerging trends</b> in the field of climate change, human mobility, and human rights (including more specific themes such as displacement, gender equality, and social inclusion), in the context of the Asia Pacific region.</p>	<p>2. What are <b>the research gaps and emerging trends</b> in the field of climate change, human mobility, and human rights (including more specific themes such as displacement, gender equality, and social inclusion), in the context of the Asia Pacific region?</p>
<p>3. To identify <b>the research outlook and possible research</b> in the field of climate change, human mobility, and human rights (including on more specific themes such as displacement, gender equality, and social inclusion), in the context of the Asia Pacific region.</p>	<p>3. What are <b>the research outlook and possible research</b> in the field of climate change, human mobility, and human rights (including on more specific themes such as displacement, gender equality, and social inclusion), in the context of the Asia Pacific region?</p>

### **Box 1. RWI, APANDD, and the Asia Pacific meetings on the climate change, human mobility, and human rights nexus**

The Raoul Wallenberg Institute of Human Rights and Humanitarian Law (RWI) is an independent academic institution with a mission to promote universal respect for human rights and humanitarian law through research, academic education, and institutional development programmes. RWI maintains a primary vision to be a centre of excellence that contributes to society's development through a human rights focus. Its mission is to contribute to a wider understanding of, and respect for, human rights and international humanitarian law.

RWI has taken the initiative to reinvest in the Asia Pacific Academic Network on Disaster Displacement (APANDD) which was established by RWI in 2019 to research issues within the fields of climate change, human mobility, and human rights. RWI held the Asia Pacific Conference on Climate Change, Human Mobility, and Human Rights (CCHMHR) Nexus (hereinafter the APANDD Conference) to discuss the state of knowledge and the research landscape at the nexus of CCHMHR in the Asia Pacific context on the 25<sup>th</sup>–27<sup>th</sup> of October 2022, in Bangkok, Thailand. RWI organized a follow-up academic workshop on this topic, with a specific focus on the Mekong sub-region. The workshop, held in Bangkok, Thailand on the 25<sup>th</sup> of November 2022 was entitled, "Climate Change, Mobility, and Human Rights: Slow onset environmental change and displacement in the Mekong Region" and conducted in collaboration with the Center for Social Development Studies, Chulalongkorn University, and the Office of the High Commissioner for Human Rights (OHCHR).

The inter-relationship between this literature review and the conference and workshop can be seen below. The progress and initial findings of the literature review were presented at the conference for comments and feedback. Input from multiple sessions of the conference was subsequently incorporated into this report, and as part of the network's strengthening efforts, the results of the literature review may also produce other spin-off research outputs.







## 2. Methodology

Photo: Dried dam lake and  
river on summer, water crisis at Anatolia  
**Shutterstock | muratart**

## 2.1 Review approach

A literature review is a study that analyzes and synthesizes the existing literature by identifying, challenging, and advancing the building blocks of theory through the examination of previous works. A pragmatic approach to demystify and shape the academic practice of conducting literature reviews is adopted in our review. We concentrate on the types, focuses, considerations, methods, and contributions of literature reviews as independent, standalone studies.

In this research, we conducted a systematic literature review (SLR), following an inductive reasoning approach to establish and apply a set of criteria to guide the collection of academic sources for review. SLR like this provide both an overview of the state of the literature and point towards future agendas for research (Kraus et al., 2022).

This review focuses on between-domain hybrids and examines the diverse literature around climate change, human mobility, and human rights in the Asia Pacific region. We adopted the Preferred Reporting Items for Systematic Review and Meta-analysis (PRISMA) 2020 statement protocols for literature data collection (Page et al., 2021). PRISMA was designed to help systematic reviewers transparently report why the review was done, what the authors did, and what they found. PRISMA enable planning and recording of the review methodology, serves as a safeguard against making arbitrary decisions when conducting the review, and allows the reader to evaluate a selected report of the review that has been completed. If a study is published, it will reduce duplication of work and potentially rapid collaboration by other scholars. The PRISMA 2020 statement replaces the 2009 statement and includes new reporting guidance that reflects advances in methods to identify, select, appraise, and synthesise studies (including the checklists, explanation and elaboration, and flow diagram).

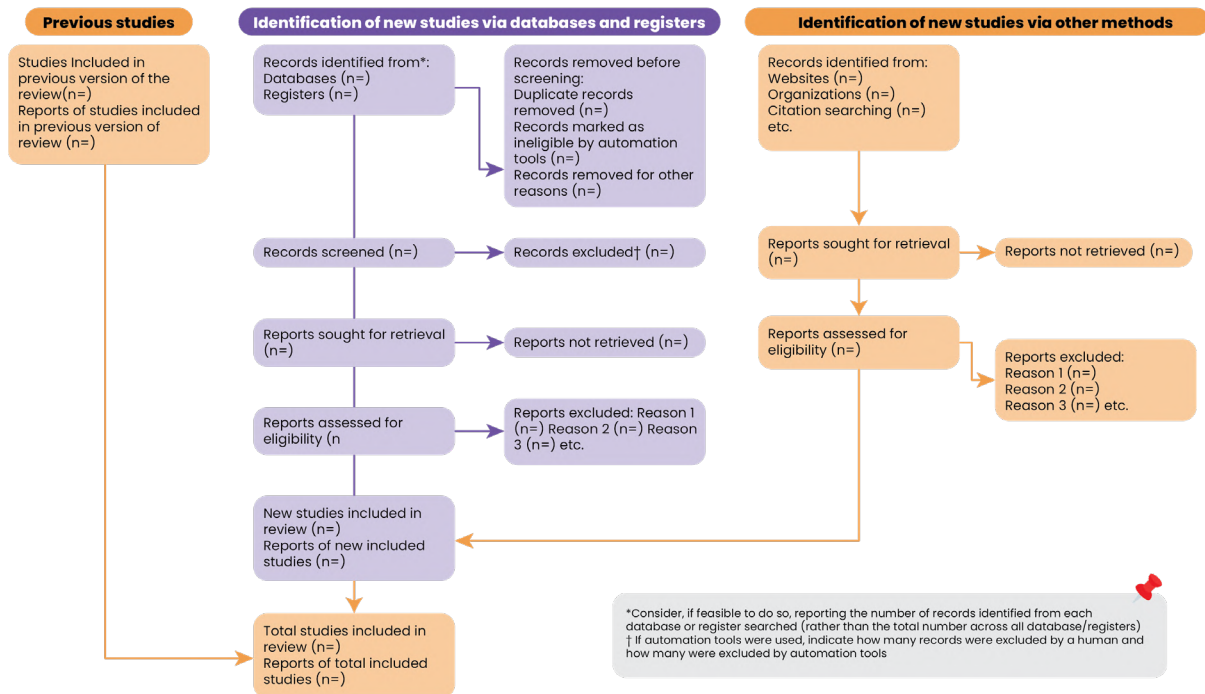


Figure 1. PRISMA 2020 flow diagram template for systematic reviews (Page et al., 2021)

Our literature review employed methods of bibliometric analysis, alongside elements of content and meta-analysis. The bibliometric analysis measures the literature and processes data by using algorithms, arithmetic, and statistics to analyze, explore, organize, and investigate large amounts of data. This enables scholars to identify and unveil hidden patterns during the literature review process. Bibliometrics allows scholars to objectively analyze a large corpus of articles (e.g., high hundreds or more) using both quantitative and qualitative techniques, by harnessing the benefits of the machine learning of the bibliographic data of scholarly research from technologically empowered scientific databases (e.g., CARI! Knowledge Engine).

Content analysis methods involve adopting, adapting, or developing an organizing framework. From a qualitative perspective, scholars can conduct a content or thematic analysis by subjectively organizing elements of the data or findings into pertinent themes. Systematic approaches for inductive concept development through qualitative research are similarly applied in literature reviews to reduce the subjectivity of derived themes.

Meta-analysis methods allow scholars to objectively establish a quantitative estimate of commonly studied relationships within the literature. This analysis is typically employed in SLRs intending to reconcile a myriad of relationships.



The relationships established are often made up of conflicting evidence (e.g., a positive or significant effect in one study, but a negative or non-significant effect in another study). Through meta-analysis, scholars can also identify potential factors (e.g., context, socio-demographic information, allocation of resources, effect of clinical treatment) that may have led to the current state of literature.

Various analytical tools were used in conducting the analysis. These include simple document counting, citation analysis, word frequency analysis, cluster analysis, co-word analysis, and cooperation analysis. Advanced tools including text mining functions were also used to facilitate a better understanding of co-occurrence networks around the key terms.

As reflected in our research objectives, there are three primary contributions of literature reviews as independent studies: to provide an overview of current knowledge in the domain, method, or theory; to provide an evaluation of knowledge progression in the domain, method, or theory, including the establishment of key knowledge, conflicting or inconclusive findings, and emerging and underexplored areas; and to provide a proposal for potential pathways for advancing knowledge in the domain, method, or theory. Science mapping in bibliometric analysis can further objectively discover thematic clusters of knowledge, clarify nomological networks, map social patterns, track evolutionary nuances, and recognise knowledge gaps.

## **2.2 Frame and scope of the review**

It is recognized that a human rights-based approach has a key role to play in responding to the current climate change emergency and the associated societal transformations that are required. Within this, increased gender equality has been acknowledged as a central aspect of addressing and reducing the effects of climate change. The Sendai Framework for Disaster Risk Reduction and the Paris Agreement both identify the promotion and protection of human rights, alongside the need to pay particular attention to the gender dimension of disaster risk, as guiding principles. Paragraph 19(c) of the Sendai Framework for Disaster Risk Reduction invites all actors concerned with disaster risk reduction to 'promote and protect all human rights, including the right to development.' A similar endorsement of a human rights-based approach can be found in the 2030 Agenda on Sustainable Development, the Paris Agreement, and the New Urban Agenda. However, none of these documents elaborates on the content of the two approaches, nor how they should be integrated to achieve positive outcomes in practice. Furthermore, literature relating to human rights and gender equality in disaster risk reduction (DRR) and climate change adaptation (CCA) is diverse, ranging from training manuals to academic publications.

As such, identifying limitations and gaps within the literature requires rigorous analysis. Scott *et al.* (2022) identify five limitations in the current literature on climate change, human mobility, and human rights: 1) a tendency to emphasize either human rights or gender equality; 2) an inability to reflect the full range of relevant human rights considerations that can be identified through a systematic review of international standards and guidelines; 3) a narrow focus on the rights-holder, with less attention paid to how duty bearers can practically integrate a human rights-based approach into operations; 4) a predisposition for current guidelines and standards to be lengthy and dense, making their integration into national policy difficult; and 5) that guidelines focus predominantly on emergency response contexts, making other dimensions of DRR and CCA less robust.

As a response, RWI led the development of the Framework for Integrating Human Rights and Gender Equality (FIRE), which was part of the Building Resilience through Inclusive and Climate-Adaptive Disaster Risk Reduction project (Scott *et al.*, 2022). The FIRE is informed by a systematic consolidation of key international legal and operational standards and guidelines relevant to disaster risk reduction, climate change adaptation, and emergency preparedness. The framework was designed to address the five aforementioned limitations. Development began with articulating a specific human rights-based approach to DRR and CCA based on integrating standards from twenty international guidelines. These were then categorized under four classes of protections: substantive, procedural, governance, and non-discrimination and equality (Scott *et al.*, 2022, p. 3). The resulting framework consists of six dimensions of rights, reflected in the model below:

- 1. Fundamental rights and equality.** This dimension focuses on realizing fundamental rights reflected in international standards, including human rights treaties and operational guidelines. It highlights how gendered social and political structures influence the enjoyment of rights by individuals and groups, as well as their access and entitlements to natural, physical, social, and human resources. It sees equality as an end in itself, and as a right established under international law and reflected in national constitutions. For rights to be realized, the right to participation must be respected, protected, and fulfilled to enable individuals and groups to claim their rights and to promote accountability of duty bearers.
- 2. Non-discrimination.** This dimension focuses on addressing existing patterns of discrimination and causes of inequality based on identity or socio-economic characteristics such as gender, age, class, caste, ethnicity, health, wealth, and so forth. It recognizes that causes of inequality intersect in a variety of ways, affecting every aspect of the enjoyment of rights.



- 3. Participation and access to information.** This dimension focuses on promoting meaningful, equal, gender-sensitive, and effective participation of women, girls, boys, and men of diverse gender identities, ages, abilities, and backgrounds in policy/decision-making that shape their entitlement.
- 4. Governance systems and structures.** A dimension that focuses on developing and/or improving three types of systems; namely: law, policy, and procedures on DRR and resilience building; (*availability and quality of ...*) institutions for decision-making and accountability; and (*availability and quality of ...*) diverse platforms for civil society.
- 5. Agency and empowerment.** This dimension focuses on enhancing the ability of rights-holders, particularly of disadvantaged and marginalized groups to exercise their rights and entitlements and to influence decisions and policies that shape their rights and entitlements. Here, attention is focused on the recognition of and efforts to strengthen agency, capacities, and leadership as well as collective learning and actions.
- 6. Social norms and context.** This dimension focuses on transforming social and gender norms that shape inequalities in rights, entitlements, and voices that contribute to vulnerability.

The FIRE has been drafted, tested, and refined through literature review, policy analysis, workshop consultations, and field-based research activities, primarily in Nepal and the Philippines (Scott et al., 2022). In Nepal, the FIRE was employed as a framework to recommend enhancement to quantitative risk assessment methodologies. The results suggested systematic consideration could inform more inclusive, gender-equal and rights-based interventions. The FIRE was also piloted in initiatives relating to risk assessment, land-use planning, and emergency response preparedness in Nepal and the Philippines. In the context of land-use planning, the FIRE helps to underline the strengths and weaknesses of strategies and processes by integrating and promoting women's participation in decision-making, whilst also providing suggestions to balance the fulfilment of rights to shelter, work, education and freedom of movement and the duty to protect people and property from disaster risk (Scott et al., 2022). These examples have shown the utility of FIRE as a tool for research, legal and policy analysis, training, and education. Accordingly, the six dimensions of FIRE are also used in this literature review to classify the collected literature. In the context of planned relocations, FIRE helps to address possible tensions between the attainment of the rights to life, shelter, and property and keeping in line with international human rights standards and gender-informed decisions.

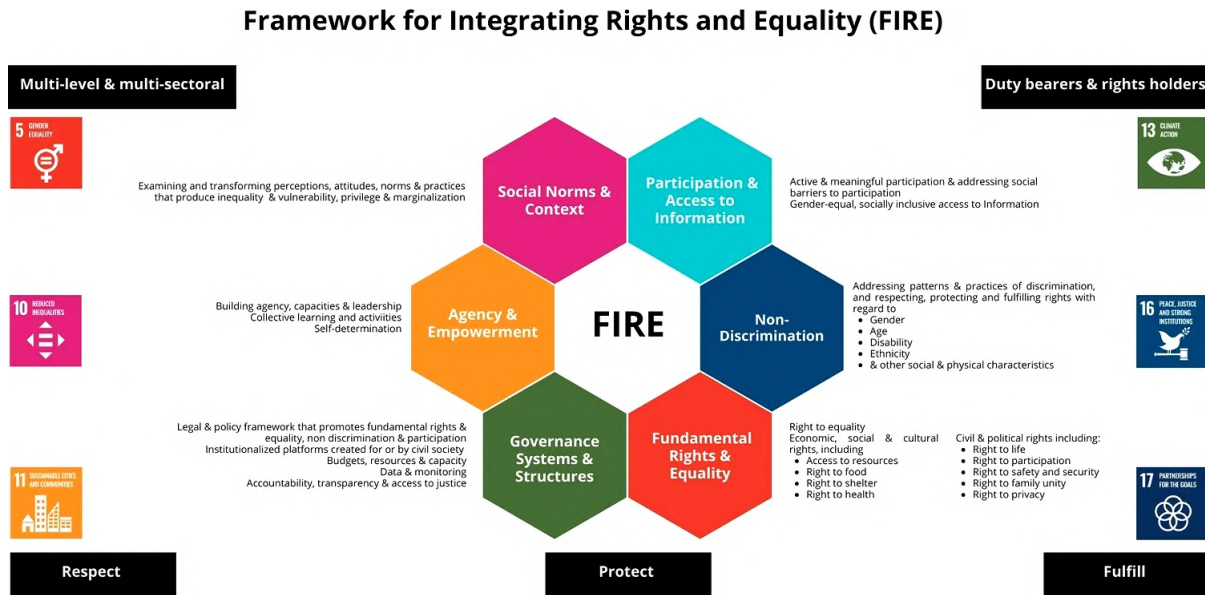


Figure 2. Framework for Integrating Human Rights and Gender Equality (Scott et al., 2022)

To frame the climate change, human mobility, and human rights nexus literature review, we combine the substance of FIRE with the climate-risk concept outlined by the IPCC in its 5<sup>th</sup> Assessment Report (IPCC, 2014). The IPCC’s AR5 conceptual framework is shown here, in Figure 3, with risk at the centre. The framework encompasses any actions aimed at reducing GHG emissions (i.e., climate change mitigation), as well as actions to reduce climate-risk and impacts. The figure shows how this can be linked with the FIRE. To display empirical links between the two concepts, we limit the scope of our literature selection to climate actions involving the following types of human mobility: displacement, migration, planned relocation, and immobility. The first-three are reflective of the Agenda for the Protection of Cross-Border Displaced Persons in the Context of Disasters and Climate Change (The Nansen Initiative, 2015), whilst the fourth category, immobility, is included to acknowledge the recent wave of literature on barriers to mobility or active choices by communities not to move (Benveniste et al., 2022; Black & Collyer, 2014; IOM, n.d.; Yee et al., 2022; Zickgraf, 2019). In environmental migration research, immobility is categorized into voluntary (that is the result of choice to stay) and involuntary immobility (commonly referred to as ‘trapped populations’), which is understood as those people who need to move, want to move, and yet lack the ability to do so (IOM, n.d.; Thornton et al., 2023). As such, the inclusion of this category is crucial in understanding the nexus of climate change, human mobility, and human rights.

- » **Displacement:** situations where people are forced to leave their homes or places of habitual residence – either temporarily or permanently.
- » **Migration:** movements that are predominantly voluntary, however, potentially influenced by climate-related factors. Migration can be permanent, temporary, or seasonal, and can be both internal or cross-border in nature.
- » **Planned relocation:** a solution-oriented measure, usually involving the State, where all or part of a community (as distinct from an individual/household) is physically moved to another location and resettled there.
- » **Immobility:** a condition when an individual, household, or community is not capable of, or willing to move from their place of habitual or temporary residence. This includes when they want to move, but cannot do so.

The framing concept of the literature review, as shown in Figure 3, has an initial working hypothesis that most literature would discuss the chain from the actual or perceived climate-impact, from both rapid and slow-onset disasters, its effect on decisions around forced or voluntary mobility, and ultimately whether or not the rights of those affected have been respected, protected and fulfilled. Nevertheless, we also attempted to search for and include literature that details any mobility caused by or linked to actions to reduce GHGs. For example, we would include examples of migration, displacement or relocation linked to reforestation or forest management efforts.

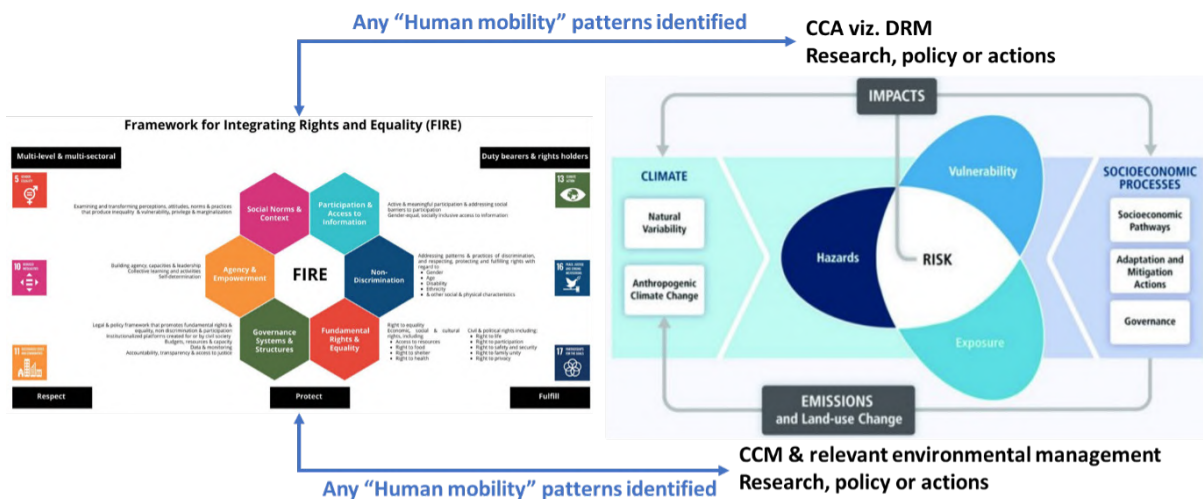


Figure 3. Review lens: interlinkages between FIRE and climate-risk framework

## 2.3 Data collection methods

This review utilizes the scientific publication database platforms CARI! Knowledge Engine, Web of Science, and Google Scholar. Multiple databases were used to avoid potential limitations due to database size or scope, and also to include as wide a range of research as possible. A schematic diagram of the data collection is shown in Figure 4 below. CARI! Knowledge Engine curated publications indexed in the Scopus repository, Directory of Open Access Journal (DOAJ) repository, and Portal Garuda repository. For this review, we only selected scientific publications in English, and partially excluded data from the Portal Garuda, as it can be biased toward Indonesia. The justification for choosing CARI! as the primary literature collection source is because of its geotagging feature, which allowed us to disaggregate the literature based on country. CARI! also has text-based content tagging features, which are useful to collate works by the type of climate change intervention or hazard type.

The initial data collection was conducted in October 2022. It identified 7,056 pieces of relevant literature using general keywords, such as “human rights,” “migration,” “displacement,” and “refugee.” However, analysis of the collected literature found many of these pieces were focused more broadly on the impacts of climate change, without reference to human rights or human mobility. To rectify this, a second analysis of the literature was conducted in November 2022. A more comprehensive range of search terms were used, including “resettlement,” “displaced person,” “land grab,” and “environmental victim.” This returned a higher number of results, indicating a more comprehensive search. Google Scholar was also added as a database for crawling the literature at this stage, which resulted in more refined and relevant keywords to climate change in a broad sense.

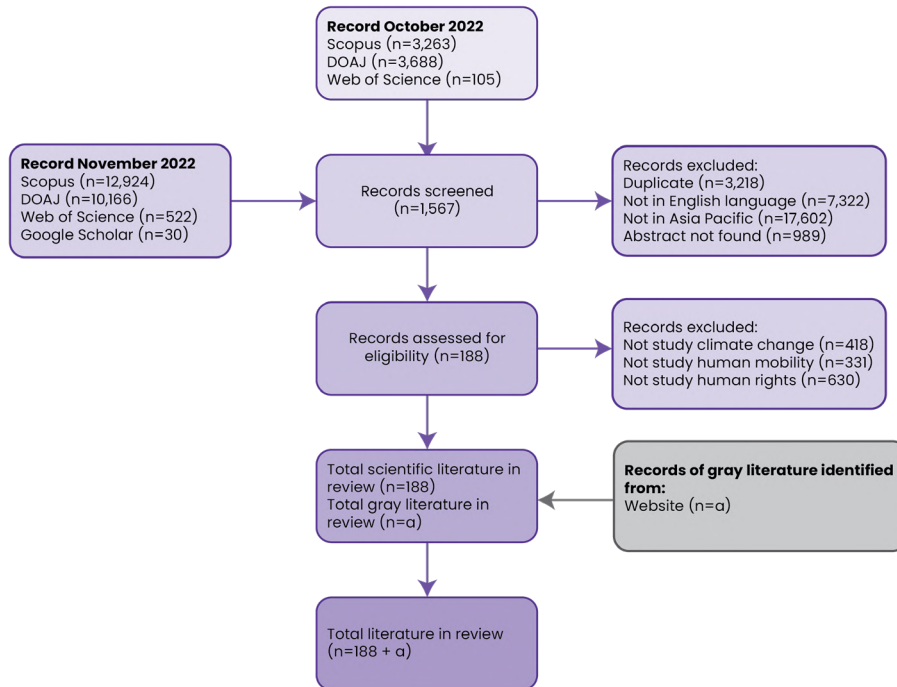


Figure 4. Literature data collection process

Although automatic tagging was beneficial in the early stages of data collection, a deliberate manual scanning process was then required to verify the accuracy of the tagging system. The collected literature was passed through three stages of keyword tagging and filtering to validate its relevance. Keywords were sought for titles, abstracts, and keywords of scientific publications. Filter steps to validate the literature context are outlined in Table 2.



Table 2. Keywords list for literature collection<sup>1</sup>

Step	Keywords	Rationale	Process
Step 1	"Climate change", "global warming", "climate impact", "climate hazard", .....	To identify literature related to climate change and its hazardous impact	Automatically by CARI! engine
Step 2	"displacement", "migration", "relocation", "human mobility", .....	To identify literature related to the type of human mobility	Automatically by CARI! engine
Step 3	"Human rights", "equality", "non-discrimination", "transparency", .....	To identify literature related to human rights	Automatically by CARI! engine

The initial search using the CARI! Knowledge Engine database found 30,698 potentially relevant sources. At the identification stage, 1,567 of these were identified as specifically relevant to the scope of this review and were collated to act as the main dataset. This reduction was achieved after screening results to remove record duplicates (n=3,218), non-English language records (n=7,322), and those that did not focus on the Asia Pacific region (n=17,602). Sources were also removed from the results when an abstract could not be found (n=989). Subsequently, an eligibility stage assessment excluded another 1,379 sources because they did not thoroughly study the areas of climate change, human mobility, or human rights. The final number of sources that meet the inclusion criteria was 188, with the oldest being published in 1981.

Similar data collection methods were applied during the Indonesia Disaster Knowledge Update (IDKU) October synthesizing process. IDKU October examined the literature around disasters, human mobility, and human rights in Indonesia. The only differences were that IDKU included all-natural hazard types, not just climate-related hazards, and focused exclusively on the Indonesian context. This selection process found 192 relevant sources, mostly from the Portal Garuda directory.

<sup>1</sup>The long list of keywords are: human rights, human rights-based approach, displacement, migration, mobility, refugee, migrant, cross-border displacement, cross-border migration, internal-border, climate change-induced displacement, climate-change-induced migration, immobility, internally displaced persons, climate-induced displacement, climate-induced migration, Guiding Principles on Internal Displacement, The MEND Guide, durable solution, The Pinheiro Principles, Universal Declaration of Human Rights, relocation, climate gentrification, green gentrification, climate-driven migration, climate-driven displacement, climate refugee, climate migrant, climate victim, environmental migrant, environmental refugee, resettlement, land loss, climate exodus, climate change mitigation, climate change adaptation, low emission development, urban shift, renewable energy plant, climate action, REDD, REDD+, land grabbing, solar park, dam, just transition, land conflict, seawall, loss of land, land acquisition.

A photograph showing a desolate landscape of building ruins and bare trees in the water under a cloudy sky on a gloomy day. The scene is dominated by a purple and orange color palette, suggesting a sunset or sunrise. The ruins are scattered across the water, and the sky is filled with heavy, dark clouds. The overall mood is one of despair and environmental devastation.

# 3. Climate change, human mobility, and human rights in the Asia Pacific at a glance

Photo: Landscape of building ruins and bare trees in  
the water under a cloudy sky on a gloomy day

Freepik | wirestock

### 3.1 Global key instruments addressing the nexus of climate change, human mobility, and human rights

Climate change is already affecting people’s decisions to move and is projected to increase the displacement of people globally in the future. The Intergovernmental Panel on Climate Change (IPCC) stated that climate change would increase the risk of displacement as populations with limited resources will have a higher level of exposure to extreme weather events, in both rural and urban areas. This is particularly the case in developing countries with low income (IPCC, 2022; Scott, 2022). The adverse effects of climate change have a range of implications for the enjoyment of human rights, including detrimental impacts on the rights to life, water and sanitation, food, health, and adequate housing. These negative impacts may contribute to vulnerability, human mobility, and displacement, and pose an increased risk to human rights – especially so for displaced persons. Again, this is particularly the case for people living in countries that are especially vulnerable to climate change and have limited resources or capacity to prepare for or respond to these risks.

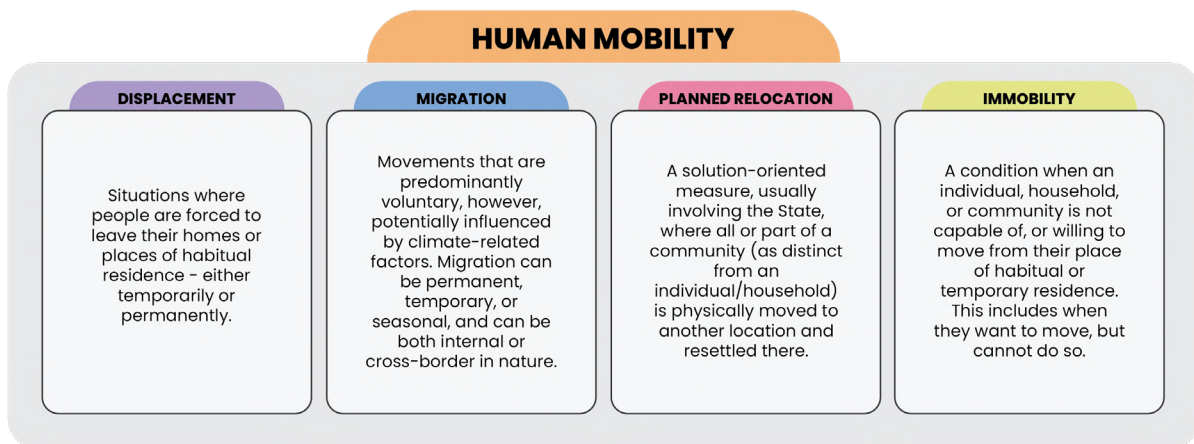


Figure 5. Key concepts for human mobility in the context of the review

Displacement is generally understood as the primarily forced movement of persons. The Platform on Disaster Displacement refers to disaster displacement as situations where people are forced to leave their homes or places of habitual residence because of a disaster or to avoid the impact of an immediate and foreseeable natural hazard. Such displacement occurs when individuals are (i) exposed to (ii) a natural hazard in a situation where (iii) they are too vulnerable and lack the resilience to withstand the impacts of that hazard (Platform on Disaster Displacement, n.d.). Displacement here creates humanitarian challenges, affects human rights, undermines development, and may, in some situations,

increase security risks. It can take two forms: internal displacement and cross-border displacement. The Guiding Principles on Internal Displacement defines Internally Displaced Persons (IDPs) as “people or groups of people who have been forced or obliged to flee or to leave their homes or places of habitual residence, in particular as a result of or in order to avoid the effects of armed conflict, situations of generalized violence, violations of human rights or natural or human-made disasters, and who have not crossed an internationally recognized State border” (Commission on Human Rights, 1998). On the other hand, cross-border displacement in the context of disasters and the effects of climate change refers to situations where people flee or are displaced across borders in the context of sudden- or slow-onset disasters, or in the context of the adverse effects of climate change.

While migration is often viewed as a failure to adapt to the changing environment, it can also be observed as a positive coping strategy, such as reducing pressures on ecosystems (Gemenne & Blocher, 2017; Warner et al., 2010), and diversification of rural household income sources (Bernzen et al., 2019; Maharjan et al., 2020; Vinke et al., 2022). Reducing the risk of migration for vulnerable households and communities may be achieved through adaptive capacity-building such as training and formulating a specific work-visa for those who come from regions with higher exposure to climate-relevant impacts.

Planned relocation is a form of human mobility that occurs when communities move in order to mitigate the risks of existing hazards or adapt to anticipated future hazards (UNHCR, 2014). While definitions of planned relocation vary widely, Bower & Weerasinghe (2021) define planned relocations as the planned, permanent movement of a group of people from identifiable origin(s) to identifiable destination(s), predominantly in association with one or more hydrometeorological, geophysical/geological, or environmental hazard(s). The purpose of planned relocations is to permanently move people away from high-risk areas or to completely remove community exposure to hazards. Planned relocation is the last resort of climate adaptive measures, as recognized in the Warsaw International Mechanism on Loss and Damage (UNFCCC, 2018). This was a direct consequence of the Conference of Parties (COP) decisions associated with the Paris Agreement that required the establishment of a task force to develop recommendations for integrated approaches to avert, minimize, and address displacement related to the adverse impacts of climate change. The process may also generate negative outcomes for the community, however, such as social and economic problems, conflicts, and human rights issues. Planned relocation raises serious and complex human rights considerations, starting from the process to determine whether planned relocation should take place at all. Planned relocation must involve and promote the participation of all affected, including both the community moving and those already living at the intended



destination. Governments are required to create an enabling environment for all affected parties, including a legal basis, institutionalization, capacity building, and the implementation of a human rights-based approach throughout the process of relocation.

The United Nations High Commissioner for Refugees (UNHCR), the Brookings Institution, Georgetown University, and other experts have developed guidance for states, which includes 13 recommendations for implementing a planned relocation (UNHCR et al., 2014): 1) planned relocation should be a measure of last-resort; 2) early identification and protection of people exposed to climate-related disasters and events through measures such as mitigation and adaptation projects should be in place; 3) planning for relocation requires observation and the creation of an enabling environment; 4) planned relocation should be integrated into national strategies, plans, laws, and policies; 5) planning for relocation requires mechanisms for comprehensive feasibility studies, including appropriate vulnerability and risk-assessment activities; 6) government planning for relocation should integrate principles of consultation and participation with affected communities into its decision-making and consent mechanisms; 7) planned relocations must integrate a human rights-based approach; 8) the vulnerabilities of various constituencies in each stage of a planned relocation must be identified and considered; 9) planned relocations should be designed and implemented in a sustainable manner; 10) an equitable compensation scheme based on the needs of affected communities should be established; 11) an independent and comprehensive monitoring and evaluation system should be established; 12) accountability mechanisms should be established to hold government and other relevant stakeholders accountable; and 13) adequate funding and strategies for planned relocation should be made available.

Since the 2004 Indian Ocean earthquake and tsunami, various global initiatives have been designed in an increasing attempt to address the interlinkage of climate change, disasters, and human mobility – including displacement. The issue has been addressed in the Sendai Framework for Disaster Risk Reduction 2015–2030, the 2016 Agenda for Humanity, the 2030 Agenda for Sustainable Development, the UN Framework Convention on Climate Change (UNFCCC) 2015 Paris Agreement, which also established the Task Force on Displacement (TFD), the Nansen Initiative and its successor the Platform of Disaster Displacement, and the Global Compacts for Safe, Orderly and Regular Migration and on Refugees. These international instruments recognize and promote the need for cross-sectoral, coordinated action to address the diverse and region-specific challenges of human mobility in the context of disasters and climate change, including in relation to the protection of human rights.



The Cancun Adaptation Framework (2010) adopted at COP16 under the UNFCCC, recognised human mobility as a key part of the international climate framework. Paragraph 14(f) catalyzed the integration of human mobility as a part of the climate change response, stating that the UNFCCC:

“ Invites all Parties to enhance action on adaptation under the Cancun Adaptation Framework ... by undertaking, inter alia, the following: ... (f) Measures to enhance understanding, coordination and cooperation with regard to climate change induced displacement, migration and planned relocation, where appropriate, at national, regional and international levels; ”

Paragraph 7(a)(vi) of Decision 3/C.18, adopted during COP18 in Doha, also mandates further exploration to understand how climate change is affecting patterns of migration, displacement, and human mobility.

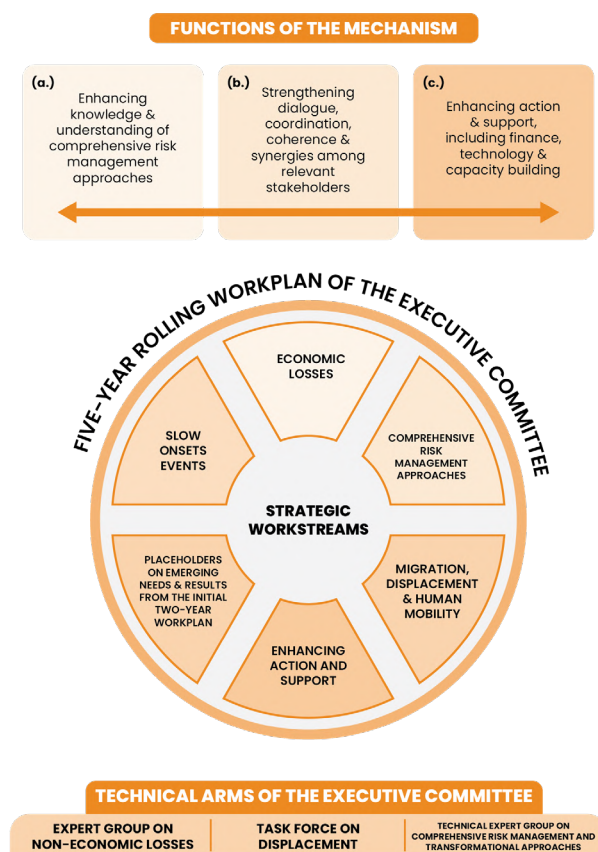


Figure 6. The functions of the Warsaw International Mechanism for Loss and Damage (UNFCCC, 2018)

These texts, particularly Paragraph 14(f), provide the basis for a wide range of actions, from levels of action (national, regional, and international), types of measures (research, coordination, and cooperation), and types of mobility (displacement, migration, and relocation). Paragraph 14(f) also paved the way for the establishment of the Warsaw International Mechanism on Loss and Damage (WIM) at COP19. The WIM aims to address loss and damage associated with the impacts of climate change and is guided by the Executive Committee under the guidance of the COP (Figure 6). Concurrently, under the UNFCCC, Article 8 of the Paris Agreement provides a framework (Figure 7) for addressing loss and damage, and in its accompanying decision under Decision 1/

CP.21 (para. 49) mandates the WIM to establish the TFD to develop and provide recommendations for integrated approaches and actions which fall under the framework of Article 8 of the Paris Agreement. The recent development saw the COP27 in 2022 agreed on the provision of loss and damage funding for vulnerable

countries hit hard by climate disasters. It is imperative to observe and inform the transitional committee, that will prepare the mechanism of both the new funding arrangements and the fund at COP28, to include human rights-based approach and durable solutions for climate-related displacement.



Figure 7. Relationship between the Task Force on Displacement, the WIM, and the UNFCCC (UNFCCC, 2018)

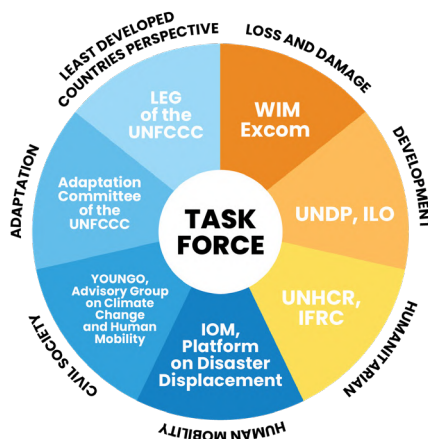


Figure 8. Approach of Task Force on Displacement (UNFCCC, 2018)

The mandates of the TFD include, *inter alia*: to identify legal, policy, and institutional challenges, good practices, and lessons learned; and to consider approaches to avert, minimize, and address displacement related to the adverse impacts of climate change at subnational, national, regional, and international levels (UNFCCC, 2018). This inclusive approach allows the TFD to complement and draw upon the work of existing bodies and expert groups under the UNFCCC, as well as other relevant organizations and expert bodies outside the Convention.<sup>2</sup>

<sup>2</sup>The TFD defines the terms ‘avert’ as “measures to reduce or avoid the risk of forced and unmanaged migration as much as possible...[which] may include disaster risk reduction, climate change adaptation and mitigation, resilience building and community stabilization,” to ‘minimize’ as “measures to facilitate safe, orderly and regular migration as part of adaption strategies to climate change and thus, curb the number of people forced to move by providing alternative livelihoods...[which] may include ensuring migration pathways via free movement protocols, labor schemes or transhumance agreements or, as a last resort, planning relocations of people living in high risk areas,” and to ‘address’ as “measures to prepare for and respond to displacement when it happens, including through ensuring assistance and protection for those on the move due to climate change, and seeking lasting solutions...[which] may include contingency planning, humanitarian relief aid, granting, expediting or waiving visas, non-return policies or reintegration strategies.”

Outside the relevant organizations and expert bodies shown in Figure 8, the works under the TFD share similarities with what has been accomplished under the Nansen Initiative on Disaster-Induced Cross-Border Displacement and its successor, the Platform on Disaster Displacement (hereinafter the Nansen Initiative). The Nansen Initiative includes three forms of human mobility in its definition. Building upon paragraph 14(f) of the Cancun Adaptation Framework, the definition includes migration (defined as the primarily voluntary movement of persons), planned relocation (defined as a planned process of settling persons or groups of persons to a new location), and displacement (defined as the primarily forced movement of persons) within its understanding of human mobility in the context of climate change and disasters.

The Nansen Initiative arose from the identification of a protection gap around cross-border movements in the context of disasters and the effects of climate change. While people displaced within their own countries are covered by national laws, international human rights law, the UN Guiding Principles on Internal Displacement, and a few regional instruments, there are no comprehensive international instruments addressing cross-border mobility due to disasters, including those linked with climate change. In most cases, these people cannot be defined as refugees under current international refugee law, and human rights law does not specifically address their specific rights and needs related to their movement. Furthermore, criteria to distinguish between forced and voluntary movements in the context of disasters had not yet been established and this situation was further aggravated by institutional and technical shortcomings.



*Figure 9. Key areas of the Protection Agenda  
(The Nansen Initiative Secretariat, 2014)*

As such, it was evident there was a need for an inter-governmental process to address the challenges of cross-border displacement in the context of disasters and climate change. The Nansen Initiative has a state-led, bottom-up consultative process as its mechanism. It aims to facilitate consensus-building among participating states on key principles and elements around the protection of cross-border disaster-displaced persons in the context of disasters caused by natural hazards, including those linked to climate change. This is based upon three pillars (Figure 9): 1) international cooperation and solidarity; 2) standards for the treatment of affected people regarding admission, stay, and status; and 3) operational responses, including funding mechanisms and responsibilities of international humanitarian and development actors. It also aims to improve efforts to manage disaster displacement risk to prevent displacement, to help people living in high-risk areas to move to avoid exposure to hazards and potential displacement, and to address the needs and rights of IDPs.

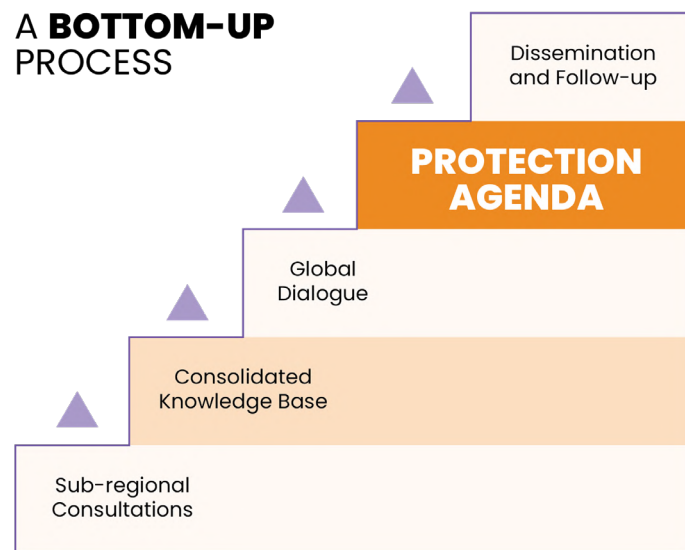
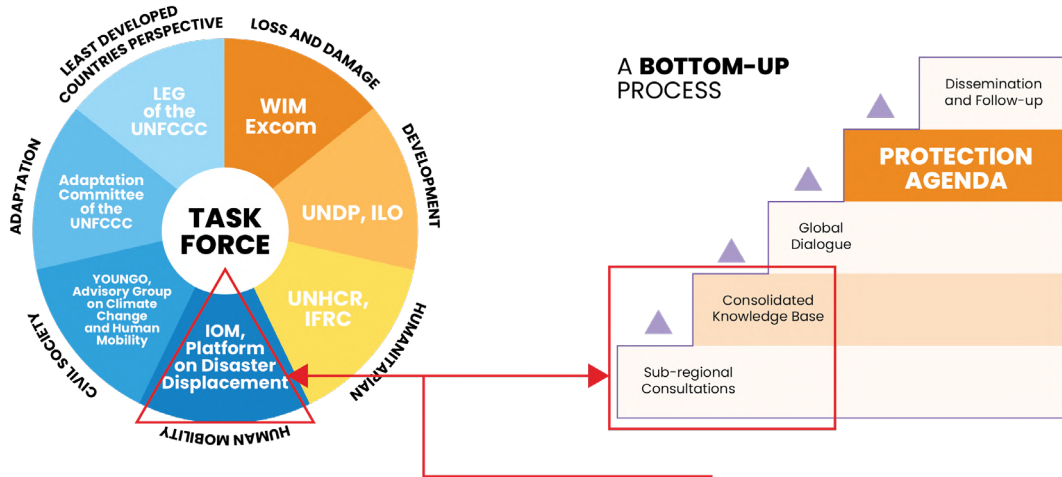
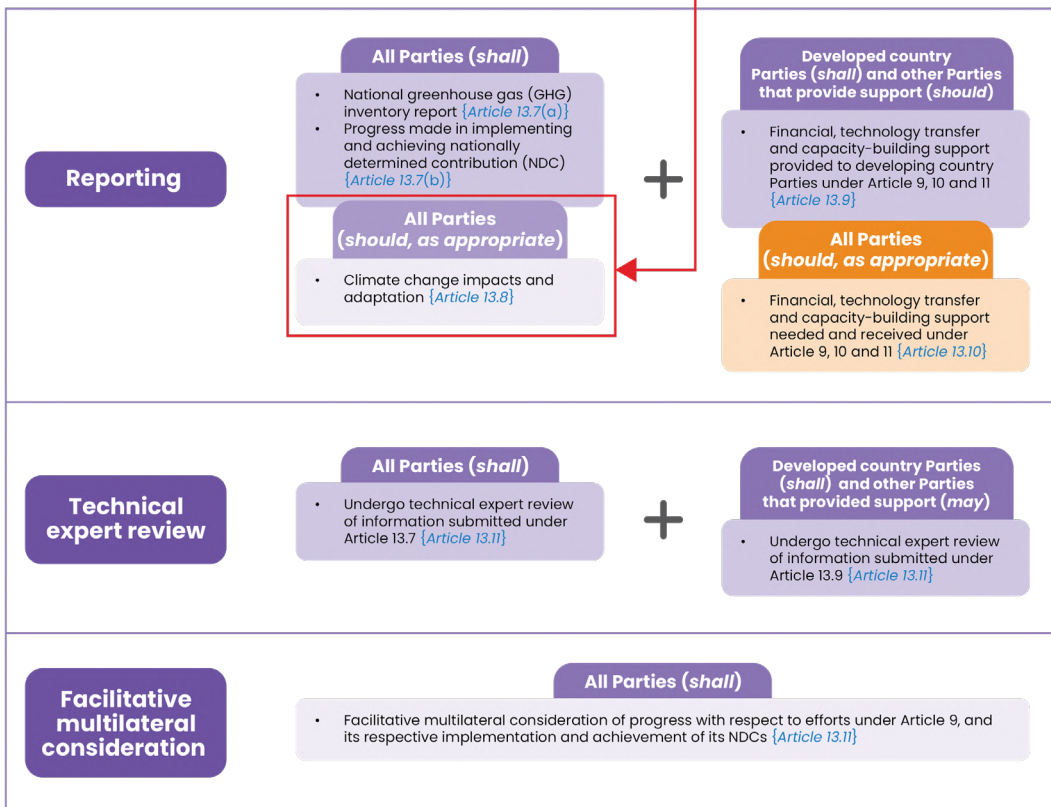


Figure 10. The Nansen Initiative's Approach  
(Nansen Initiative Secretariat, 2014)

The agenda of the Nansen Initiative covers all relevant phases of cross-border mobility in relation to disasters including climate change. Namely, it lists preparedness before displacement occurs, including prevention, protection and assistance during displacement, and transition to durable solutions in the aftermath of the disaster. The agenda exhibits the scope of the Nansen Initiative to focus not just on the needs of cross-border displaced persons, but also on related issues such as disaster risk reduction, internal displacement, and the management of migration as an adaptation measure.



**Article 13 of the Paris Agreement: transparency of action and support**



- Note:*
1. The transparency framework shall provide flexibility in the implementation of the provisions of this Article to those developing country Parties that need it in the light of their capacities [Article 13.2](#)
  2. The transparency framework shall recognize the special circumstances of the least developed countries and small island developing states [Article 13.3](#)

Figure 11. Monitoring relationship between the Paris Agreement, Task Force on Displacement, and the Nansen Initiative



The interwoven relationship between the UNFCCC and the Nansen Initiative highlights the importance of addressing human mobility, particularly on issues of cross-border displacement. The Paris Agreement provides for the negative impacts of this type of human mobility to be addressed under the umbrella of adaptation, as exhibited by the establishment of TFD, while the Nansen Initiative focuses on a broader spectrum – from preparedness and prevention to protection during movements, and onto durable solutions in the aftermath. This showcases the concern for both mitigating and adapting to cross-border displacement issues.

The relationship between the Paris Agreement and the Nansen Initiative can also be strengthened, particularly through monitoring processes. The Paris Agreement establishes an Enhanced Transparency Framework designed to build trust and confidence that all countries are contributing their share to the global effort. It also mandates its state members to take measures in their national strategies to prevent and mitigate forced internal and cross-border displacement, based on close consultation with communities at risk. This indicates a top-down or hybrid approach to implementing cross-border displacement adaptation strategies. In contrast, the Nansen Initiative explicitly requires a bottom-up approach from states, *inter alia*, through a consultative committee. This committee is made up of representatives from non-state actors informing states in the process. Based on this relationship, processes under the Nansen Initiative may inform both activities under TFD and the Paris Agreement directly. TFD activities may also provide knowledge for the Paris Agreement and the Nansen Initiative, both directly and indirectly, through the participation of international organizations and other relevant non-state actors in both arenas, as well as coordination between states.

## 3.2 Climate change and displacement in the Asia Pacific region

Regionally, the IDMC (2022) estimates that around 225.3 million people were internally displaced in the Asia Pacific region between 2010 and 2021. Significantly, this equates to around 78% of global displacements during this time, highlighting the elevated exposure the Asia Pacific region experiences.<sup>3</sup> Figure 12 indicates that weather-related hazards were the largest driver of internal disaster displacement

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<sup>3</sup>The term of internal displacements corresponds to the estimated number of forced movements of people within the borders of their country caused by disasters including pre-emptive movements.

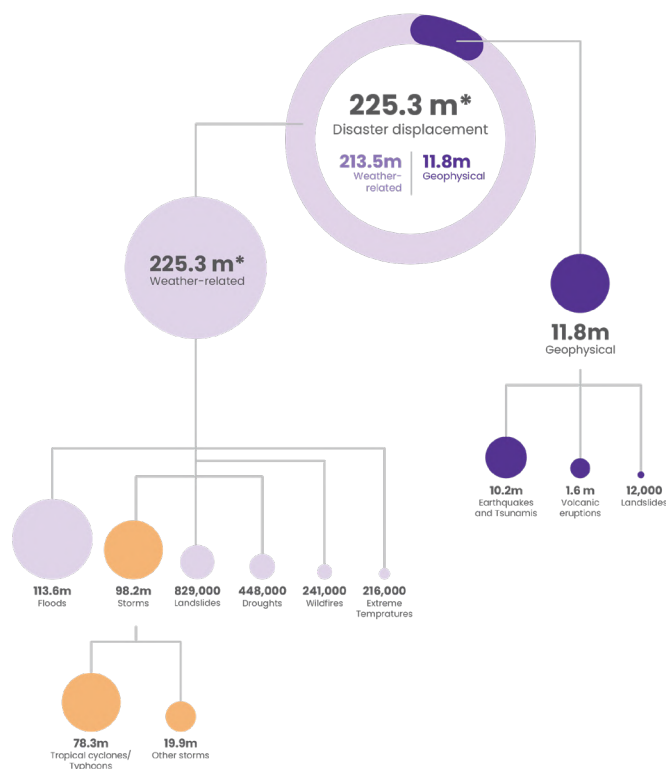


Figure 12. Global number of disaster displacements  
(Source: IDMC, 2022)

in the region, when compared to geophysical hazards. Floods and storms alone were responsible for around 211.8 million displacements during this time – equivalent to 99.2% of the total weather-related internal displacements. The actual number of people becoming mobile due to climate-related circumstances, whether through displacement or other types of human mobility, is likely to be higher.

Research initiated by the UN Economic and Social Commission for Asia and the Pacific provides a greater level of detail on internal displacements within five sub-regions of the Asia Pacific: East and Northeast Asia; North and

Central Asia; Pacific; Southeast Asia; and South and Southwest Asia.<sup>4</sup> There is a notable gap in total internal displacements by weather-related hazards between the top three and bottom two sub-regions in Figure 13. This is due to several factors such as high population density, increasing urbanization, and population growth mirrored by economic growth in several developing countries, as well as geographical factors that make the top three sub-regions vulnerable to storm and flood hazards (e.g., Japan and the Philippines). For example, China (East and Northeast Asia), India (South and Southwest Asia), and Indonesia (Southeast Asia) have high populations and strong economies that continue to grow, which leaves a large number of people exposed to the hazards that drive internal displacements in this region. In the Pacific sub-region, the absolute number of people displaced is relatively low when compared to the top three other sub-regions, largely due to their smaller populations.

<sup>4</sup><https://data.unescap.org/dataviz/methodology/list-of-countries-in-the-asia-pacific-region-and-subregions.html>

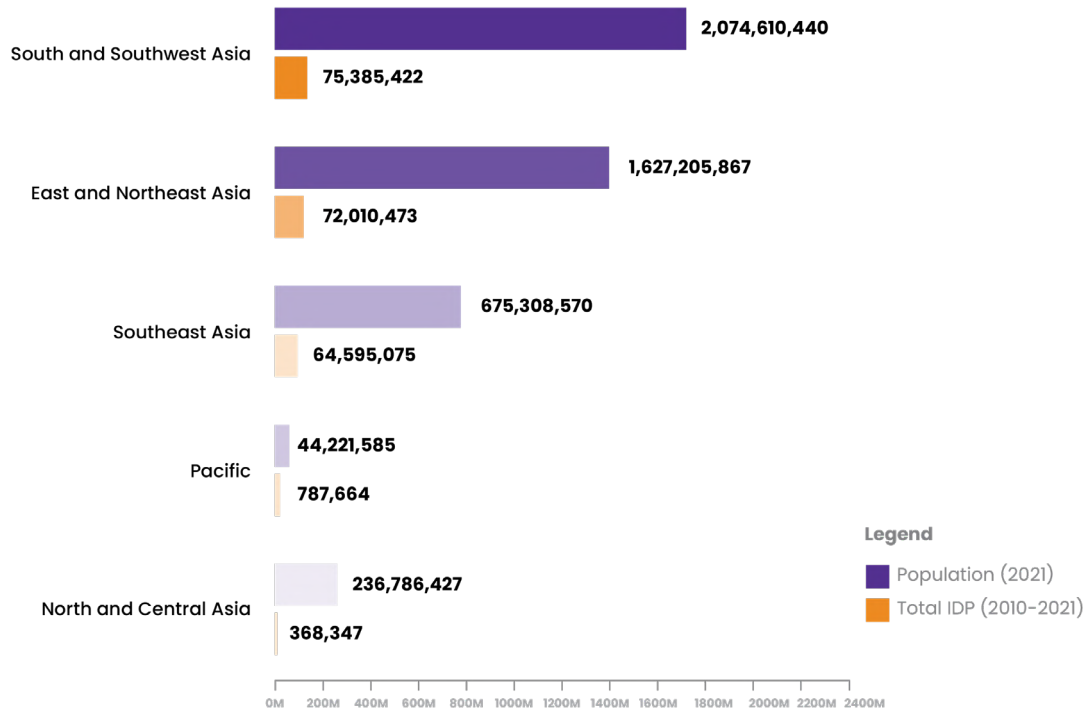


Figure 13. Total internal displacements by weather-related hazards 2010-2021 and population 2021 by sub-regions (Data source from IDMC, 2022, & World Bank, 2021)

Gross numbers of IDPs alone might lead to false conclusions, so a figure representative of the proportion of the population displaced is required. As in the case of the Pacific sub-region, which generally consists of Small Islands Developing States (SIDS), low numbers of IDPs may indicate a considerable portion of the population. To illustrate this, Figure 14 excludes Australia, New Zealand, and Papua New Guinea from the Pacific sub-region, and focuses solely on SIDS as they are some of the states most vulnerable to climate-related hazards (Petzold & Magnan, 2019; Robinson, 2020). For example, while Fiji “only” recorded 190,494 IDPs, this represents 20% of their total population of 924,610 people. Even more significantly, Vanuatu registered 151,762 IDPs, representing almost 50% of their population. Therefore, displacement is a major issue for Fiji and Vanuatu and its further projection due to climate impacts should be managed systematically as part of the nation’s climate adaption, risk reduction, and resilience-building plans.

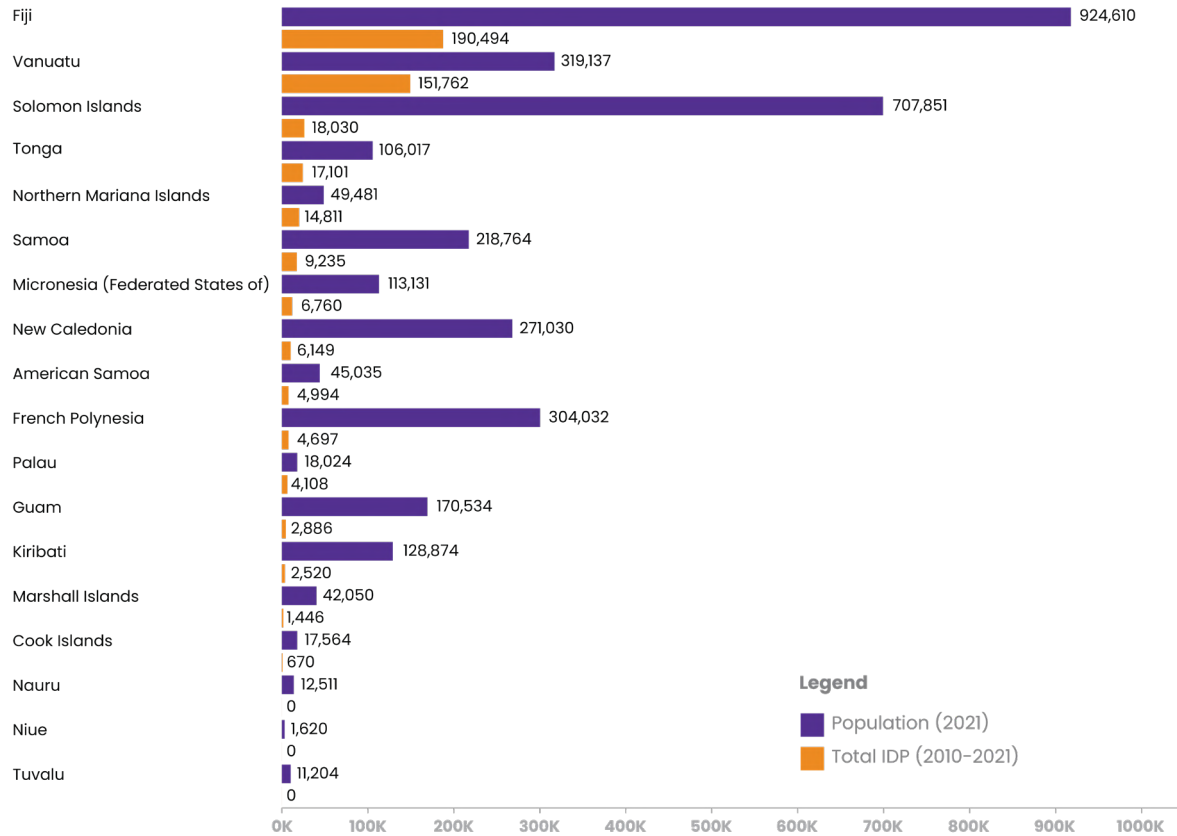


Figure 14. Total internal displacements by weather-related hazards 2010-2021 and population 2021 by Pacific countries (Data source from IDMC, 2022, & World Bank, 2021)

To understand the context of climate change, human mobility, and human rights, we further used three publicly available metrics, namely the INFORM Climate Change Index, the Universal Human Rights Index, and the IDMC datasets. The INFORM Climate Change Index is used to see how likely a given country is to experience a humanitarian crisis requiring international assistance, due to climate-related hazards or changes. States are given a value range of 1-10, where 1 is a very low level of risk and 10 is very high. Meanwhile, the Universal Human Rights Index allows us to assess the number of human rights recommendations in each country related to the topic of disasters and climate change. For the human mobility aspect, the IDMC data is used to collate the total number of internal displacements due to weather-related hazards that have occurred in each country for the 2010-2021 period.

**Climate Change Risk Index vs. Human Rights Recommendations  
(Analysis, 2022)**



Figure 15. Climate Change Risk Index vs. Human Rights Recommendations (Analysis, 2022)  
(Data sourced from INFORM Climate Change, 2022; Universal Human Rights Index, n.d; Internal Displacement Monitoring Centre, 2022)

Figure 15 collates key aspects of these three datasets into a single table. The table shows the distribution of climate risk in Asia Pacific countries, the latest displacement figures, and the number of human rights recommendations recorded in OHCHR’s database. This study argues that countries with higher numbers of human rights recommendations have a higher potential to improve how they address issues of human rights and social inclusion when managing displacement dynamics. One key data point from OHCHR is the Universal Periodic Review (UPR). This is a process where all UN member states are given the opportunity to review the human rights records of other members based on a periodic cycle, where several countries are reviewed and three countries served as troika or rapporteur for each country (OHCHR, 2022). This check-and-balance mechanism under the UNHRC is relevant to this study to understand “who is recommending what for whom” under UN formal processes. This data will be elaborated in Section 4.2 of this report.



As indicated in Figure 15, Fiji and Maldives were categorized as low-risk countries with the highest number of recommendations and placed at the top-left extreme, Afghanistan and Myanmar as high-risk countries with the lowest number of recommendations received and placed at the bottom-right extreme, while the Philippines is placed in between the extremes. Accordingly, hypothetically speaking, if Maldives, Fiji, or the Philippines were exposed to the same magnitude of climate hazards and ensued with displacement they may manage displacement better than Myanmar or Afghanistan. However, this does not necessarily mean that Fiji and Maldives have better human rights protections in regard to IDPs and climate change risks. For example, the recommendations indicate that several recommendations actually call for the Fijian government to strengthen national frameworks to ensure women's participation in disaster preparedness planning (Committee on the Elimination of Discrimination against Women, 2018, para. 54):

- “ 54. The Committee recommends that the State party ensure that women participate in the drafting of plans and strategies for disaster preparedness and that it:
- (a) Set up public funds to support families in the wake of disasters and create a system for the immediate supply of basic necessities, including water and sanitation, food and urgently needed medication, in case of emergency;
  - (b) Ensure that disaster preparedness plans include provision for setting up women-only shelters, where women can report cases of gender-based violence and obtain access to redress and rehabilitation;
  - (c) Take the measures necessary to ensure that private sector actors remedy the impact of their operations on affected groups, in particular women;
  - (d) Strengthen gender analysis and mainstream the concerns and rights of women by having them participate in the discussions and decisions on comprehensive measures for adaptation and mitigation in their communities. ”

Afghanistan and Myanmar are countries that have a higher level of climate risk, high numbers of reported IDPs, and few human rights recommendations. The limited number of recommendations indicate that the government of those States have limited reference points for strengthening their national frameworks for human rights protection. Hence, there is a likelihood that more human rights violations occur in the country. Furthermore, in recent years there is an increased number of conflict-related displacements in both countries. However, we should also consider that fewer human rights recommendations may be because of the sensitivity of the issue for certain States due to the suspected involvement

of certain entities with close ties to the government. An example of this is the case of Myanmar, as indicated in a report of the Committee on the Elimination of Discrimination against Women (2019, para. 52):

“ 52. The Committee recommends that the **State party protect Rohingya land from confiscation by any government entity or private actor**, ensure that affected Rohingya women and girls may return and resettle, on a voluntary basis, to their previously inhabited lands and **refrain from further implementing the Natural Disaster Management Law in a way that dispossesses Rohingya women and girls of their property.** ”

More generally, Figure 15 reveals that most countries observed are evenly distributed across the low and medium-risk categories, and vary in the number of human rights recommendations. The number of recommendations ranged from zero (no recommendation recorded) to 20. Among countries with a very low climate risk, some may experience a higher number of internal displacements such as China and Japan while countries with a lower number of internal displacements tendency are Mongolia, Kyrgyzstan, and Samoa. Various factors are related to this outcome such as population size and level of urbanization. In countries with higher populations and levels of urbanization, such as China and Japan, the risk of climate change may still come with a higher tendency of internal displacement. The density of population in urban areas, such as the existence of megalopolis areas in Japan (Tokyo Metropolitan) and China (The Shandong Peninsula) should also be considered as a contributing factor. Nevertheless, for these countries former, despite the risk of displacement due to climate hazards, potentially the State capacity would be sufficient to manage them without international assistance. In country like Japan, following climate-related disasters (e.g., floods or tropical cyclone), there is a working mechanism to ensure that the displacement is temporary in nature and the State has sufficient capacity to do so.

We might also extend the assumption above to countries with a moderate risk of climate change such as Indonesia, Bangladesh, the Philippines, and India. Further research on the issues should be encouraged, especially that which takes into account other relevant factors such as level of preparedness. For these countries, in-country variation potentially exists whereby sub-national vulnerability and capacity may determine whether the IDPs following climate-related hazards can be managed by the State and in-country actors or whether international assistance would be requested or welcomed. In this context, the operating mechanism in the Philippines is worthy of observation as it allows for a systematic

reporting of potential and actual population evacuation and displacement before and after climate-related disasters.<sup>5</sup>

Taking into consideration the availability of human rights recommendations, countries with the highest number of human rights recommendations, such as Maldives (70 documents) and Fiji (50 documents) have a lower tendency to experience higher numbers of internal displacements, most likely due to population density or on-going urbanization (which has not yet reached “megalopolis” status). The Special Rapporteur in the field of cultural rights’ report to the Human Rights Council noted this specifically in the case of Maldives (Human Rights Council, 2020):

“ 81. At the national level, the Special Rapporteur hopes that the laudable human rights-based approach to climate change in Maldives will be further entrenched and implemented. In doing so, cultural rights and the negative impact on culture must be given even greater consideration, **including with regard to all aspects of related internal migration, which is expected to result in more than half of the population moving to the capital in the next 25 years.** A human rights approach to preventing and responding to the effects of climate change should empower individuals and groups as active agents of change and not as passive victims (A/HRC/10/61, para. 94). ”

Additionally, Figure 16 depicts the ratio of internal displacements to total population size, illustrating the relative degree of disaster-related human mobility in Fiji and Maldives. The graph shows a greater ratio in Fiji, with a range of 2–4% and a peak at 8.28%, compared to the Maldives, which ranges from 0–0.06%. In 2016, Fiji experienced several tropical cyclones and depressions. The cumulative effects of these, particularly tropical cyclone Winston resulted in the highest IDP/ population ratio (8.28%) in the last 10 years, according to IDMC data.

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<sup>5</sup>See a collection of disaster situation reports in the Philippines: <https://ndrrmc.gov.ph/disaster-reports.html>

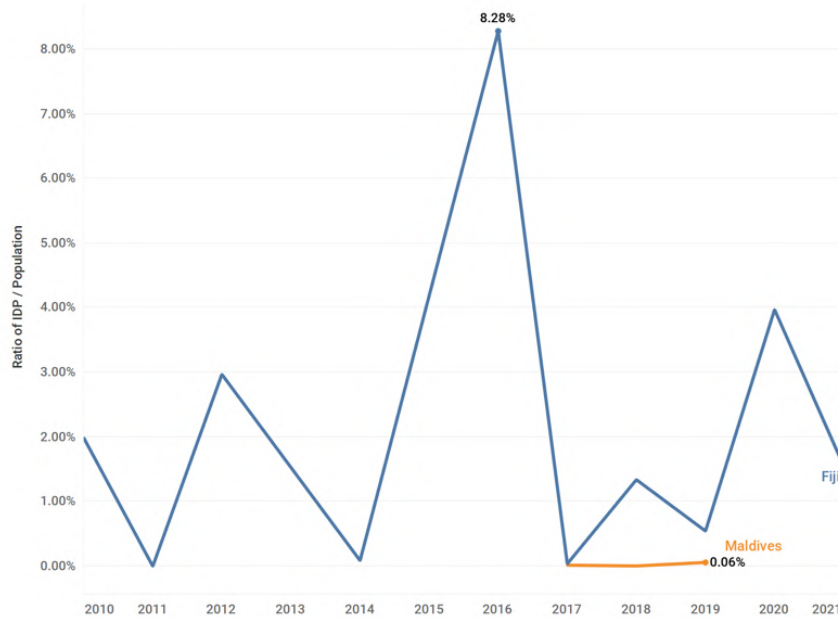


Figure 16. Ratio of IDP/population in Fiji and Maldives by year (Analysis, 2022; data from Internal Displacement Monitoring Centre, 2022, & World Bank, 2021)

We also observed a moderately high number of recommendations in countries with moderate climate risk and potentially higher numbers of internal displacements, such as the Philippines, Indonesia, and Bangladesh. Using these countries as an example, the keyword “disaster” emerges in the majority of recommendations, with a high number of references to the protection of women and children’s rights (the Philippines), environmental issues and discrimination (Indonesia), and poverty and development (Bangladesh). As an example, the Philippines is mentioned in the following report from the Committee on the Elimination of Discrimination against Women (2016, para. 25):

“ 25. The Committee notes the legislation in place in the State party and the comprehensive policy framework and inter-agency mechanisms to combat gender-based violence against women, but is concerned about: (a) The high prevalence of gender-based violence against women and girls and the low reporting of incidents of violence, in particular domestic violence and sexual violence, due to stigmatization of and discrimination against victims; (b) The limited scope of the Anti-Violence against Women and Their Children Act of 2004 (Republic Act No. 9262), which is focused mainly on domestic violence by intimate partners; (c) The fact that statutory rape under the Anti-Rape Law of 1997 is limited

*to cases in which the victim is under 12 years of age; (d) The increasing incidence of online sexual exploitation and abuse of children; (e) Intensified gender-based violence against women, including by members of the armed forces, such as killings and sexual violence and abuse in conflict-affected areas and in areas of large-scale development projects; (f) The lack of disaggregated data on gender-based violence against women in the context of displacement, armed conflict, disaster, migration and trafficking situations, as well as on gender-based violence against women with disabilities. ”*

There was a concerning pattern in countries with medium to high-risk categories, where they tended to have a higher risk of internal displacements, but received a lower number of human rights recommendations, such as Afghanistan, Myanmar, India, and Cambodia. Most recommendations also ignore issues of human rights in the context of climate change. Moreover, the majority of recommendations recorded address women’s and children’s rights, such as in the Committee of the Elimination of Discrimination against Women report (2013, para. 40):

“ 40. While noting some of the efforts made by the State party to improve the livelihood of women and men living in rural areas through, among others, its sanitation and rural electrification programmes, the Committee is concerned that women living in rural areas continue to have limited access to basic services, latrines, clean and safe drinking water, education, employment, health services, credit and loan facilities. The Committee also notes that the impacts of climate change and natural disasters disproportionately affect women and children, especially in rural areas. ”

However, these findings must be framed within the understanding that the number of human rights recommendations **does not automatically reflect** a higher level of awareness, nor better human rights protection. For example, UN Convention on the Rights of the Child document No. CRC/C/AUS/CO/5-6 encourages Australia (low-risk, low IDP risk, high number of recommendations) to take “urgent measures” (Committee on the Rights of the Child, 2019, para. 4):

“ 4. The Committee reminds the State party of the indivisibility and interdependence of all the rights enshrined in the Convention and emphasizes the importance of all the recommendations contained in the present concluding observations. The Committee would like to draw the State party’s attention to the recommendations concerning the following areas, in respect of which urgent measures must be taken: violence, including sexual violence, abuse and neglect (para. 30), children deprived of a family environment (para. 34), mental health (para. 38), the impact of climate change on the rights of the child (para. 41), asylum-seeking, refugee and migrant children (para. 45) and administration of child justice (para. 48). ”



This is an indication that higher numbers of recommendations provide countries with a higher potential to enact more effective regulations and practices to protect human rights in the context of disasters and climate change. Higher numbers of recommendations may also correlate with periodic recommendations or several recommendations from the same documents, which means that for some countries with a high number of recommendations, the documents may be published periodically while containing the same recommendations for certain human rights issues.

### 3.3 Planned relocation in Asia and the Pacific

One specific type of climate-related mobility that is gaining attention in policy and academic spheres is planned community relocations or managed retreats. The Platform on Disaster Displacement commissioned a global dataset of relocations, which found evidence of more than 400 completed or in-progress relocations worldwide (Bower & Weerasinghe, 2021). The dataset examined both relocations that occurred as a mitigation action before disasters, and those carried out in direct response to disasters that had occurred. The dataset contains metadata and attributes of 203 planned relocations from the Asia Pacific, of which 87 cases are related to geophysical hazards (earthquake, tsunami, volcanic eruption), and 116 are linked to weather-related hazards (coastal erosion, drought, flood, storm, etc.). Figure 17 shows that similarly to the drivers of internal displacement, most planned relocations are conducted in response to flooding and storm-related hazards. The highest number of planned relocations occurred in Southeast Asia. This is likely because the country's characteristics are highly exposed to flood and storm hazards. For example, the Philippines, which is located in the storm belt, was home to 25 planned relocations (out of 47 total cases in Southeast Asia). While in the Pacific sub-region, apart from planned relocations by flood and storm hazards, coastal erosion and sea level rise have caused 13 planned relocations (out of 28 total cases). This is especially the case in areas that have small island characteristics such as Fiji, Solomon Islands, and Kiribati. This emphasizes the likelihood of slow onset and sudden onset hazards related to climate change triggering more planned relocations in the future. The North and Central Asia sub-region has the least number of planned relocations, which is in line with the region's internal displacement figures.

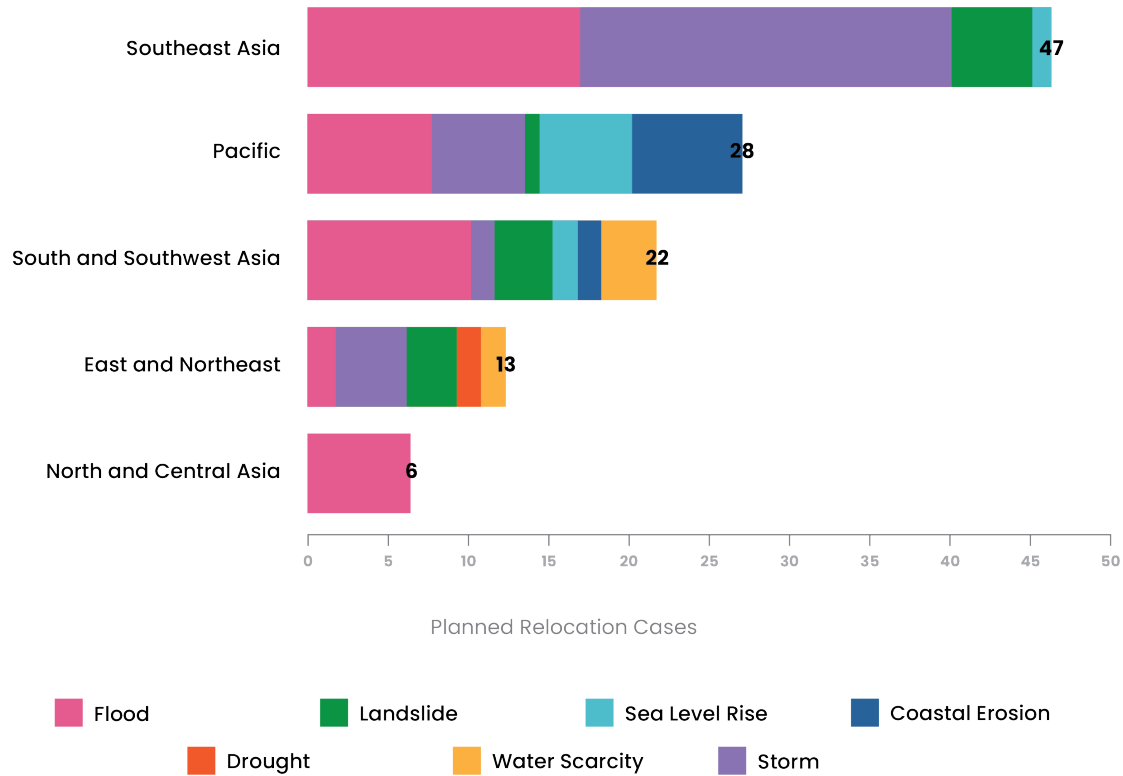


Figure 17. Planned relocation cases by weather-related hazards per sub-region  
(Analysis 2022; data from Bower & Weerasinghe, 2021)

The global planned relocation dataset also identified spatial patterns of planned relocations. For further analysis, we adapted the global dataset by filtering based on weather-related hazards and the Asia Pacific sub-region. The planned relocation cases are divided into four scenarios of spatial pattern, namely: 1) case type A (single origin – single destination), 2) case type B (multiple origins – single destination), 3) case type C (single origin – multiple destinations), and 4) case type D (multiple origins – multiple destinations) (Figure 18).

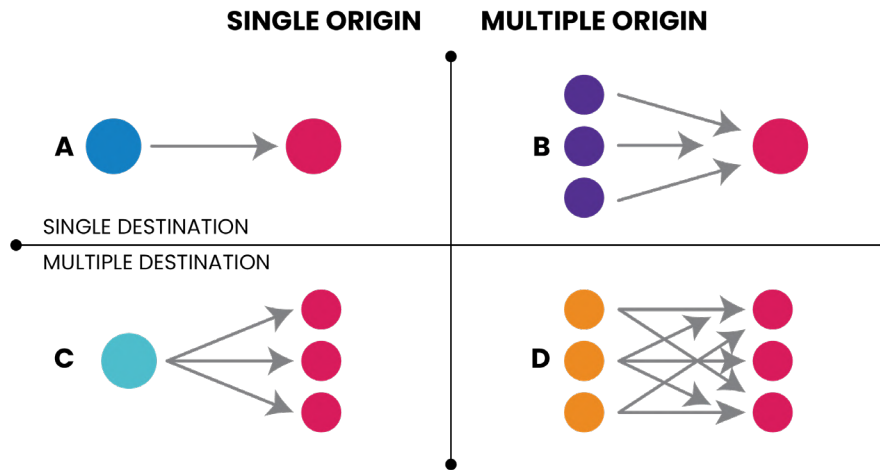


Figure 18. Typology of planned relocation spatial patterns (Bower & Weerasinghe, 2021)

Figure 19 shows the most common spatial pattern identified was type A (46 cases). Spatial pattern type B was the second most common with 32 cases, followed by type D with 20 cases, and type C with 12 cases. For six cases, the spatial pattern was unknown. The spatial pattern of planned relocation has implications for policy and practice. For instance, multi-origin relocation cases require consideration of complex dynamics of integration across multiple groups of people originating from different backgrounds, socio-economic levels, and cultures. In contrast, multi-destination relocation cases require consideration of the impacts of separation or disintegration of communities alongside potential inequities in different sub-national administrative settings (Bower & Weerasinghe, 2021).

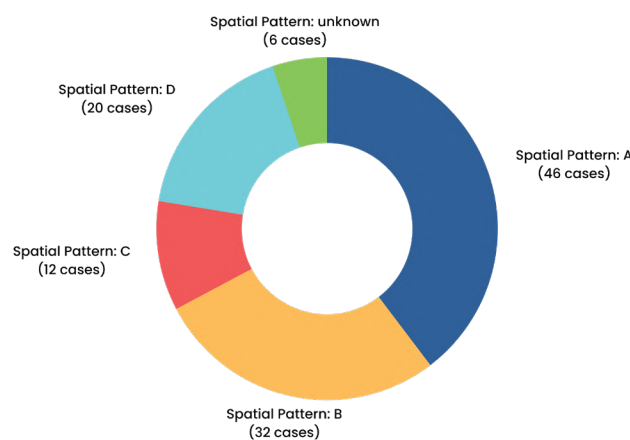


Figure 19. Spatial pattern of planned relocation in Asia Pacific

Moreover, the Platform on Disaster Displacement also launched a baseline analysis report on implementing commitments related to addressing human mobility in the context of disasters, climate change, and environmental degradation (Mokhnacheva, 2022). The report identified 259 national instruments related to human mobility in the context of disasters, climate change, and environmental degradation in the Asia Pacific region. Mokhnacheva (2022) identified that more national instruments in the Asia Pacific have direct provisions for disaster management than climate change. These instruments focus more narrowly on immediate responses to disasters, while climate change instruments place more emphasis on longer-term resilience and adaptation strategies, including through planned relocations.

Some of the grey literature and global datasets have indicated some metrics and discussions related to human mobility in the context of disasters and climate change. However, more research that can illuminate the linkage between climate change impacts, human mobility, and protection or negligence of human rights in the Asia Pacific is needed. Nevertheless, the specific type of human mobility may have various uncontrolled societal factors when it occurs. Therefore, we used the planned relocation type of human mobility, and its dataset, to assess whether or not a more controlled type of mobility leads to better human rights protection. Since this attempt is an initial one, the review utilizes datasets from the Platform on Disaster Displacement and triangulates them with online news and article sources that may indicate whether human rights issues emerged, are subsequently being studied, and how these inform policy processes. We used keywords such as “administrative name + disaster event + relocation/resettlement” to initially detect whether human rights issues are present in the planned relocation case.

Based on the dataset of the Platform on Disaster Displacement, out of a total of 116 planned relocation cases caused by weather-related disasters in Asia Pacific, eight showed clear interlinkages of climate change impacts, planned relocations, and human rights. Three of the eight cases focus on relocations due to coastal erosion in the Carteret Islands of Papua New Guinea, two on coastal relocations in Fiji, and one each on a coastal relocation in Odisha, India, a drought-related relocation in the Inner Mongolia region of China, and a flood-related relocation in Guadalcanal, Solomon Islands. Six of the eight relocations were in the Pacific sub-region and are closely related to the impacts of climate change such as drought, flood, coastal erosion, and coastal flooding. A recurrent theme throughout the cases was the issue of limited state support, especially in Papua New Guinea and the Solomon Islands. Other issues related to access to livelihoods, security, and basic standards of living were also prominent across the cases.





# 4. State of knowledge on climate change, human mobility, and human rights in the Asia Pacific

Photo: Dried dam lake and river on summer, water crisis at Anatolia  
Shutterstock | muratart



## 4.1 Knowledge landscape on climate change, human mobility, and human rights nexus in the Asia Pacific region

The number of studies containing a connection to either climate change, human mobility, or human rights in the Asia Pacific region has increased year on year, as shown in Figure 20. The increasing trend goes hand-in-hand with the general direction of research publications, as the scientific community has grown exponentially larger in the last two decades. There is a total of 188 pieces of identified literature that have been published since 1981. However, only since 2010 have we seen continuous yearly publications, with the high point occurring in 2022, with 41 individual publications.

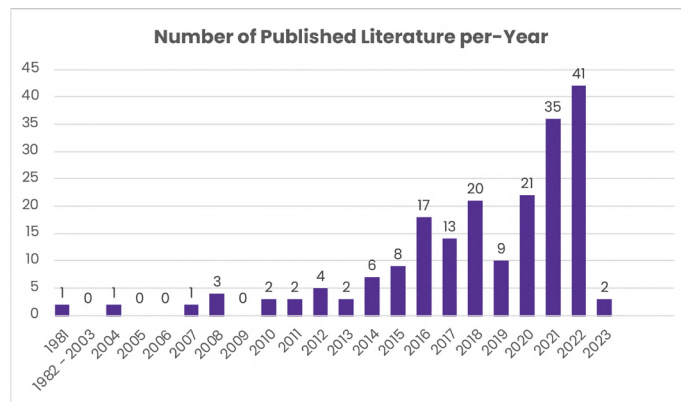


Figure 20. Number of published literatures per year (n=188)

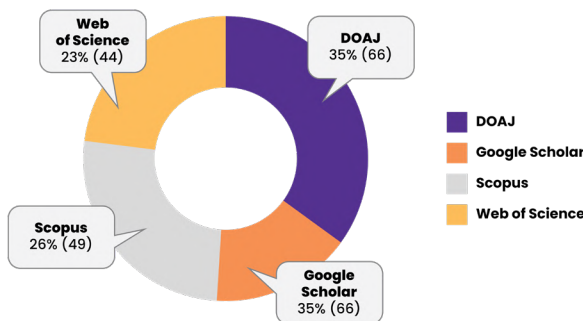


Figure 21. Number of literatures

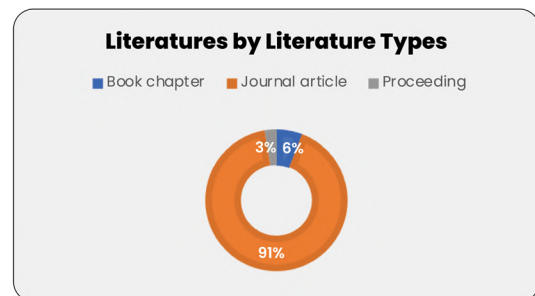


Figure 22. Number of literatures by literature types

According to the scientific literature directory source (Figure 21), literature collected from DOAJ accounted for 35% of all collected literature, followed by Scopus with 26%, Web of Science with 23%, and Google Scholar with 16%. While Figure 22 shows 91% of the collected literature was journal articles, 3% proceeding type, and 6% book chapters. Five of the journal articles conducted literature reviews themselves.

The inter-relationships of terms used in the literature were analyzed with the VOSviewer tool. The size of the node or font size indicates the total strength of the link. The connecting line between the nodes describes the relationship with each term.

The colour difference indicates the cluster link formed between the terms used in the literature. As seen in Figure 23(a), five different clusters are observed across the literature. The red cluster formed the most interlinked terminology of ecosystems, climate change, community, and approaches. The blue cluster showed terms such as model, impact, area, development, system, and solution as large nodes connected with other clusters. The green cluster is much more focused on change, adaptation, ecosystem services, region, country, and process. The purple cluster is the smallest in size and mentioned forests and mitigation. The yellow cluster is the most interlinked with other clusters, which used the term Indonesia, capacity, and land use.

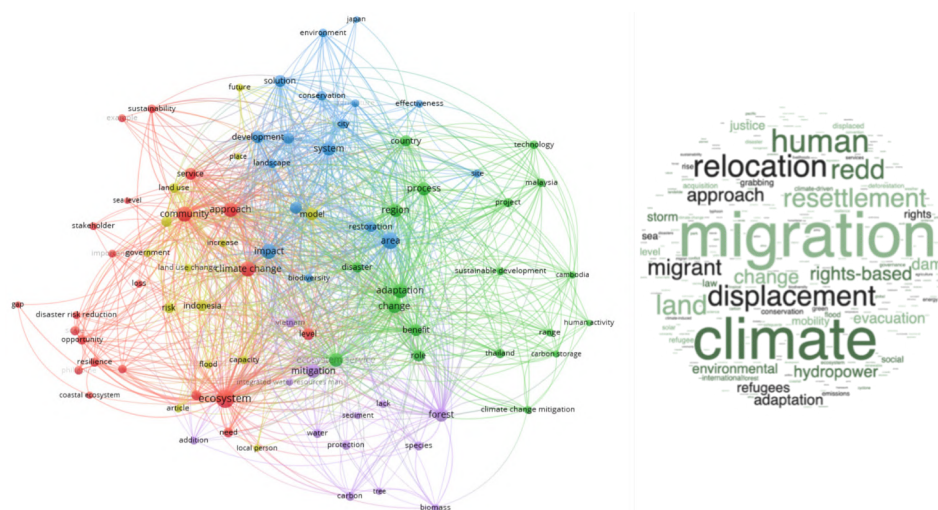


Figure 23. (a) Network of terminologies used in the literature (b) Word cloud of most frequently used keywords (n=188)

Analysis of keywords used in each literature is shown in Figure 23(b). Prominent keywords included “climate,” “migration,” “displacement,” and “human”.

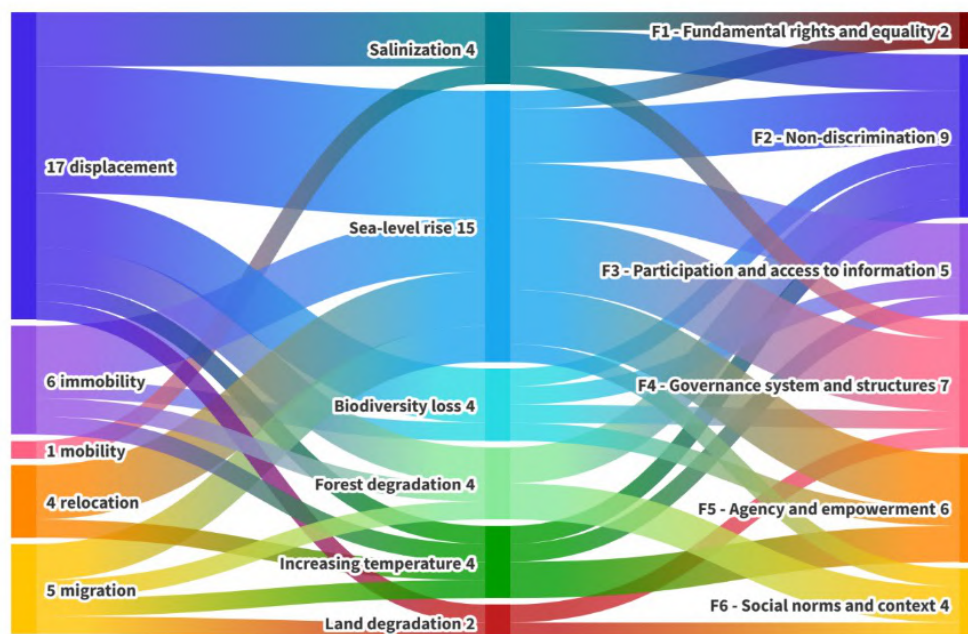
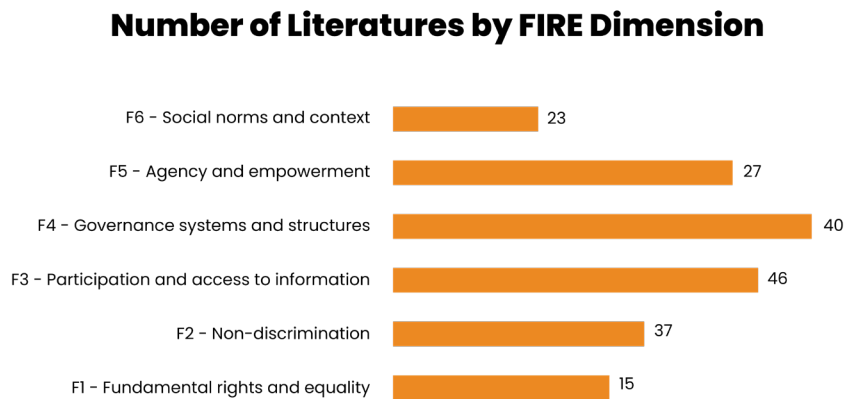


Figure 24. Studies linking mobility type, slow-onset events, and FIRE dimensions (n=33)

Figure 24 shows that 33 studies address the linkages between climate change, human mobility, and human rights in the context of slow-onset events. This study considers slow-onset events based on the report by IDMC to the UNFCCC (2018). However, this figure only provides an approximate number, since there are studies that address more than one slow-onset event, while several studies also either address slow-onset events as a general theme or address climate change impacts in general by combining slow-onset and sudden-onset events. The majority of research addresses displacement due to slow-onset events, with the highest connection between displacement and sea-level rise, such as research by Buchori et al. (2018), Imani et al. (2021), and Lisan and Putri (2020). However, based on Figure 24, it can be observed that despite the importance of protecting basic human rights in regard to human mobility due to slow-onset events, there is still limited research attempting to address the issue of fundamental rights and equality in the context of human mobility and slow-onset events.

A content analysis of the abstract of each study was conducted to determine which of the six dimensions of FIRE the studies corresponded to. For instance, to identify whether F1 (fundamental rights and equality) was studied, we look for keywords including, right to equality, access to resources, political rights and other words with equivalent meanings (i.e., "right to water" or "clean water"). One source was exclusively tagged in a single FIRE dimension, based on its abstract. The article, by Farbotko et al. (2018) mentions social equity, but this is within the

broader context of an aim to further develop and enhance international agency. Therefore, the paper tagged into F5 (agency and empowerment) and not into F1 (fundamental rights and equality).



*Figure 25. Number of literatures by FIRE dimension (n=188)*

Categorizing the content of these studies using the FIRE dimensions (Figure 25) reveals that participation and access to information, governance systems and structures, and non-discrimination are prominently studied. In contrast, issues of social norms and context, and agency and empowerment are only moderately studied. Significantly, the dataset found issues of fundamental rights and equality are quite scarcely studied. This identifies a research gap and highlights a prominent opportunity for further research and knowledge creation around this issue.

We identified 10 publications related to the right to a healthy environment and how climate change and human mobility affect this right. Miller et al., (2022) state that large-scale, state-led resettlement schemes are often designed to respond to life-threatening risks, without supporting the capacity of people to adapt to new risks from subsequent environmental deterioration in the resettlement areas. While Nurhidayah (2021) identified that climate change has put both human security and human rights, such as the right to a healthy environment, at risk.

Concerning mobility type, the analysis discovered that forced displacement in relation to climate change and human rights was dominantly studied (Figure 26). While planned relocation and voluntary migration were modestly studied, only a few pieces of literature studied immobility or general human mobility.

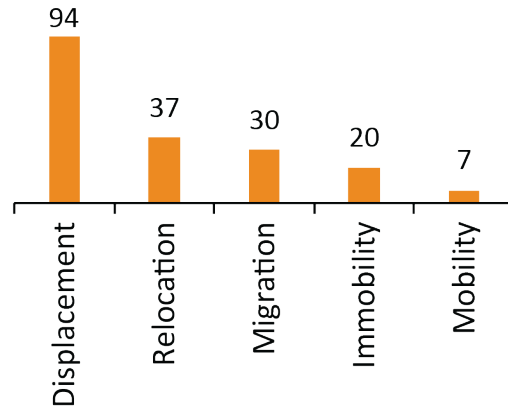


Figure 26. Number of literatures by mobility type (n=188)

In terms of climate change (Figure 27), the analysis of the literature showed that human mobility and human rights are most prominently featured in studies on climate change mitigation and climate change impact, while climate change adaptation is the least reviewed. Floods were the most frequently studied climate change impact, in relation to human mobility. While other hazards like landslides, extreme weather, sea level rise, other hydrometeorological hazards, and health-related hazard such as epidemics are also featured.

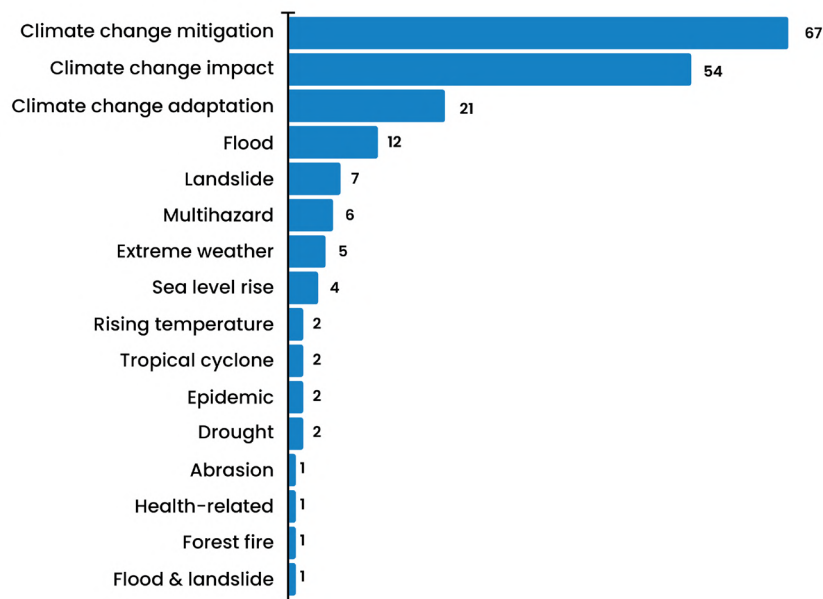


Figure 27. Number of literatures by climate change context (n=188)



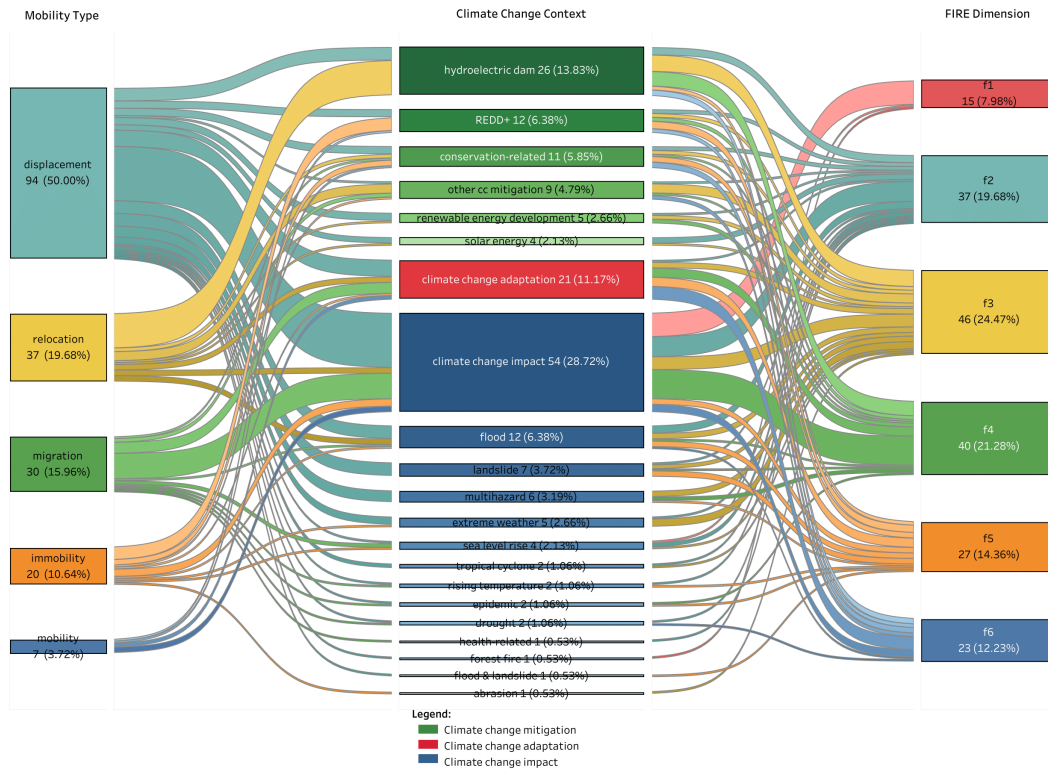


Figure 28. Sankey diagram of linked topics found in the selected literature review (n=188)

An analysis of the linkages between the three main classification of the literature is shown in Figure 28 (mobility type, climate change context, and FIRE Dimension). This Sankey diagram identifies the type of mobility, the climate change context, and the dimension of FIRE that are addressed in the 188 sources included in the review. The diagram differentiates the three major contexts based on colours: climate change mitigation (green), climate change adaptation (red), and climate change impact (blue). For climate change mitigation, the highest percentage is associated with hydroelectric dams, followed by studies on Reducing Emissions from Deforestation and forest Degradation+ (REDD+) projects, and finally conservation. The category of other climate change mitigation (CCM) refers to papers addressing either themes of climate change mitigation (CCM) not listed in the diagram, or generalized mitigation.

For climate change impact, the highest percentage of research (28.72%) addressed general themes, without focusing specifically on any one certain hazard. For example, Nash (2018) does not specifically address individual climate change impacts but connects general issues of climate change with human mobility and human rights. Another study by Warner et al. (2010) focuses on how environmental change and environmental hazards contribute to migration by

exploring the mechanisms through which vulnerability and migration are linked, without further delving into any specific hazards. Among the highly-cited sample studies, the most notable is Black et al. (2011), which states that the influence of environmental changes is still underrepresented in standard theories of migration and climate change, which focus narrowly on displacement and conceptualize migration as a problem. In answer to this, Black et al. develop a framework that identifies five families of drivers which affect migration decisions: economic, political, social, demographic, and environmental drivers, as indicated in Figure 29. Furthermore, while climate change adaptation is labelled as red, separating it from climate change impact, this report acknowledges that climate change adaptation often occurs in response to climate change impacts, thus the two are closely related.

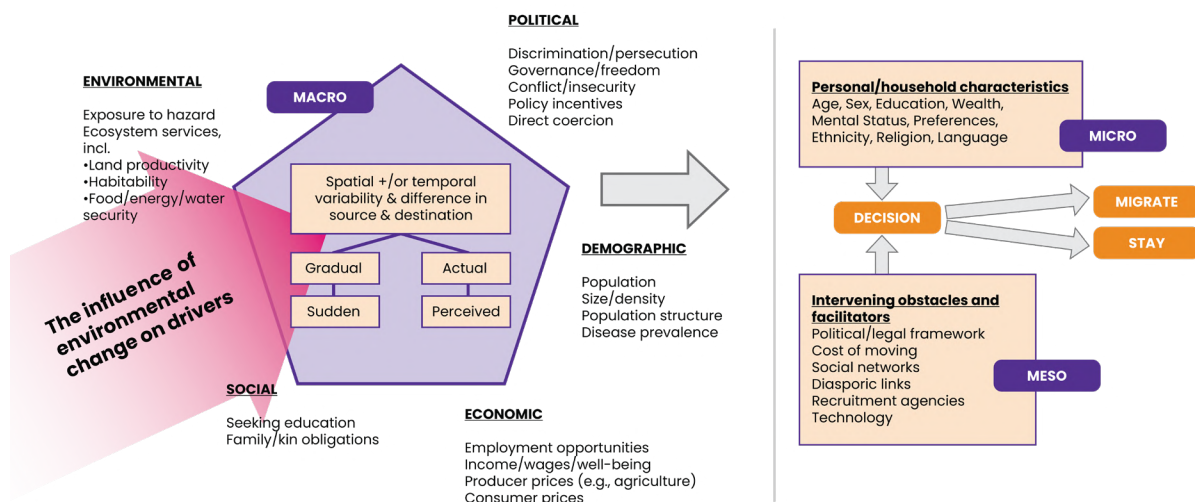


Figure 29. Conceptual framework for the 'drivers of migration' (Black et al., 2011)

Alongside the relationship between types of human mobility and various contexts of climate change, Figure 28 also highlights the FIRE categories the literature addresses. The categories include fundamental rights and equality (F1), non-discrimination (F2), participation and access to information (F3), governance systems and structures (F4), agency and empowerment (F5), and social norms and context (F6). These linkages provide insights into the areas where specific areas of human rights issues can be further integrated into research at the nexus of climate change, human mobility, and human rights.

Figure 28, shows that a high number of studies in the dataset link issues of displacement with climate change impacts – either in a general or more specific context. Many of these studies also link with the FIRE dimension of governance systems and structures (F4). For example, Mosneaga (2022a) argues that the 2021

Atami mudslide case raises several policy implications about the feasibility of existing administrative and regulatory set-ups to supervise and enforce corrective measures when it comes to unsustainable and/or irresponsible development practices that magnify existing risks of disasters and displacement. Pourhashemi et al. (2012) also note that,

“ Even though environmental immigration occurrence will most probably take place, it appears that the global community has not prepared itself for confronting this issue and has not designed the necessary legal, executive, judicial and managerial means to do so. ”

Figure 28 also indicates that planned relocation studies are highly associated with the climate mitigation context, specifically within the context of hydroelectric dams and REDD+ projects. Furthermore, non-discrimination (F3) and participation and access to information (F3) are the most commonly mentioned FIRE dimensions in studies on hydroelectric dams, while studies under the REDD+ context often link its relationship with agency and empowerment (F5). Voluntary migration studies are highly associated with the climate change impact context, while immobility studies tend to be conducted in relation to climate change mitigation. Climate change mitigation is studied quite proportionally in relation to all FIRE dimensions, with the exception being the dimension of fundamental rights and equality (F1), which is often studied within the climate change impact theme. For example, a study by Nash (2018, p.130) argues that:

“ Discussions surrounding the kind of mobilities we, as global society, want to imagine and promote in the context of climate change, as well as conceptualising responsibilities in relation to this nexus, could also benefit from further work influenced by a human rights-based approach, which can act as a counterpoint to discussions orbiting around resilience and migration management. ”

Planned relocations and their relation to climate change impacts are often studied in the context of dimensions of governance systems and structures (F4). For example, Burson et al. (2018, p.407), note that:

“ Preparation must therefore go beyond contingency planning alone, to create a legal and institutional environment that allows for effective disaster risk reduction and climate change adaptation measures, as well as laws and strategies on evacuations and permanent relocations that are shaped by a rights-based approach. These are necessary preconditions for States to respond to the challenges of global warming. ”

Such linkages are different in the context of climate change adaptation, which tends to be studied alongside social norms and context (F6). This is exhibited by Khalil et al. (2021), who attempt to link social capital and gender relationships in adaptation to a post-cyclone recovery context as another means for climate change adaptation. Moreover, the most notable research from the dataset in this relationship (CCA-F6) is a study by Baldwin and Fornalé (2017), which proposes a pluralist concept for framing relations between climate change and migration, including by utilizing concepts of communities of origin and communities of destination. Baldwin and Fornalé argue that adaptive migration, which focuses on “how to make migration a viable adaptation option for people, anyone, in the context of climate change,” may be well-addressed through this pluralist approach, including by developing a legal geography of climate change and migration (Baldwin & Fornalé, 2017, pp. 325–327).



Figure 30. (a) Map showing the number of literatures based on Asia Pacific countries  
(b) Number of literatures by sub-region (n=164)

Only 164 pieces of literature were plotted in Figure 30, as 24 sources were not specifically linked to spatial locations or were conceptual studies. Note that each piece may address more than one country and sub-region in this figure. Figure 30(a) also indicates the distribution of literature by country in the Asia Pacific region. The circle size is indicative of the number of studies in each location. The data shows Indonesia, India, China, and Bangladesh are the most frequently studied countries.

### 4.1.1 Southeast Asia

Figure 30(b) shows that Southeast Asia is the most studied sub-region, followed by South and Southwest Asia, East and Northeast Asia, and the Pacific. Studies based in the North and Central Asia sub-region are rarely found. The distribution patterns correlate with the number of internal displacements recorded across the regions. The detailed literature distribution across Southeast Asia, South and Southwest Asia, and the Pacific sub-regions are shown below (Figure 31, Figure 33, and Figure 35).

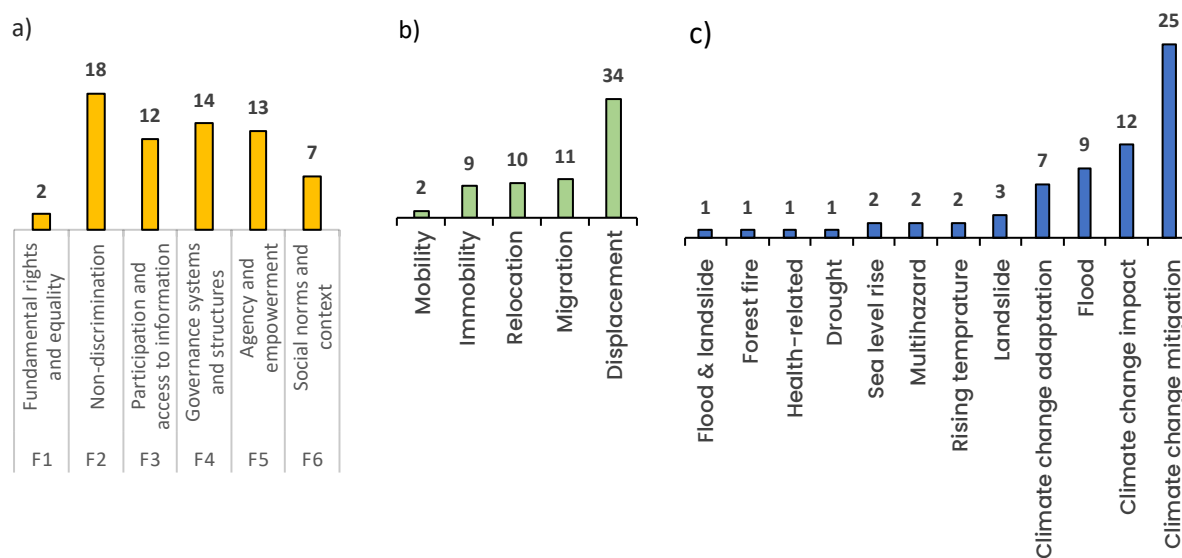


Figure 31. Literature knowledge landscape in the Southeast Asia sub-region according to (a) FIRE dimension, (b) type of mobility, and (c) climate impacts (n=66)

Studies based in the Southeast Asia sub-region more often focus on the non-discrimination dimension (F2), while agency and empowerment (F5), governance systems and structures (F4), and participation and access to information (F3) are moderately studied. Significantly, fundamental rights and equality (F1) are still underrepresented in studies of this region. This provides researchers with an opportunity to focus on the linkages between fundamental rights and equality and climate-related mobilities to attempt to build a body of knowledge in this gap. On mobility type, forced displacement is studied significantly more often than other types of mobility. While studies examining climate change mitigation feature the most frequently, followed by general climate change impacts, and adverse climate change-related hazards. This pattern correlates with the predominance of internal displacement within the Southeast Asia sub-region to occur due to weather-related hazards like floods and landslides.



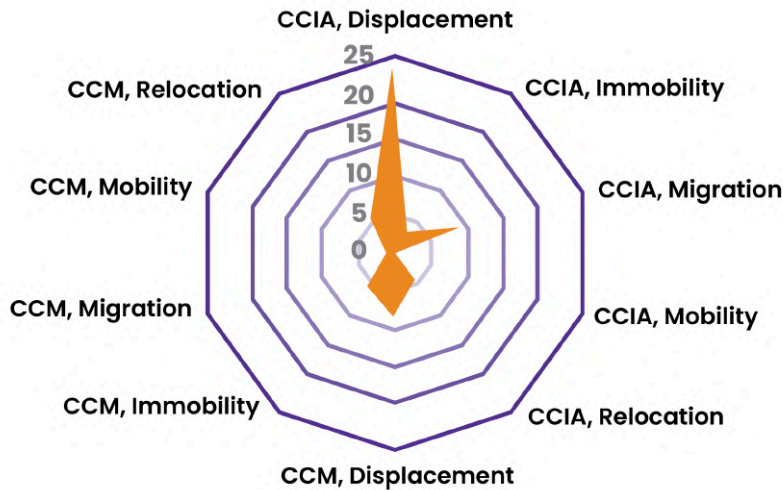


Figure 32. Knowledge graph in Southeast Asia (n=66)

The distribution of literature on Southeast Asia based on knowledge types can be seen in Figure 32. This reveals that most research in the region focuses on climate change impacts and adaptation (CCIA) and displacement, supplemented by a smaller amount of research on CCIA and migration in general, relocation, climate change mitigation (CCM) and displacement, and CCM and migration in general. Research on other potential issue areas should be promoted and supported to broaden knowledge around climate change, human mobility, and human rights in Southeast Asia and fill these identified gaps.

#### 4.1.2 South and Southwest Asia

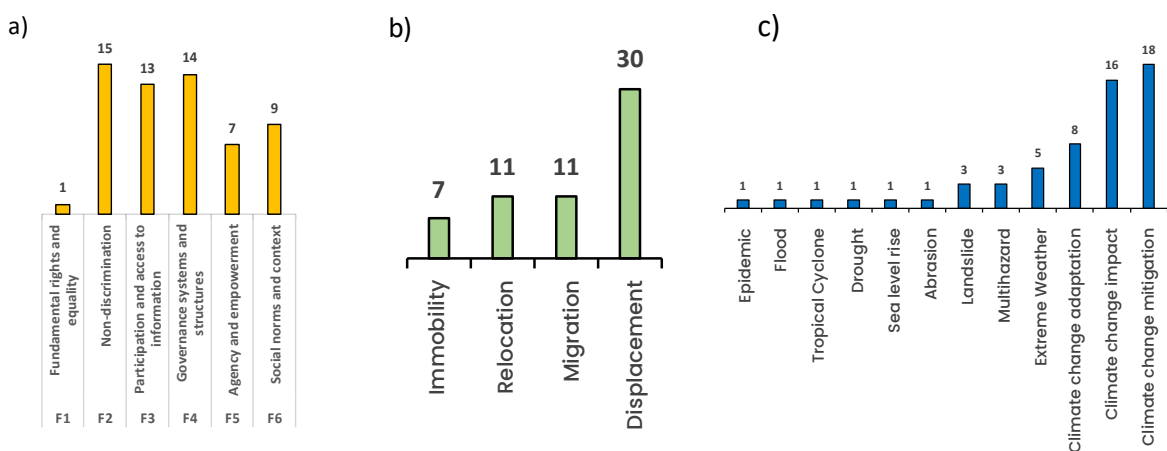


Figure 33. Literature knowledge landscape in the South and Southwest Asia sub-region according to (a) FIRE dimension, (b) type of mobility, and (c) climate impacts (n=59)

The current knowledge landscape in South and Southwest Asia (SSWA) is similar to that of Southeast Asia. The data on links to the FIRE dimensions show the study of non-discrimination (F2), governance systems and structures (F4), and participation and access to information (F3) are explored more than other dimensions. Again, forced displacement is the main mobility type studied, while climate change mitigation is more studied than more general climate change impacts.

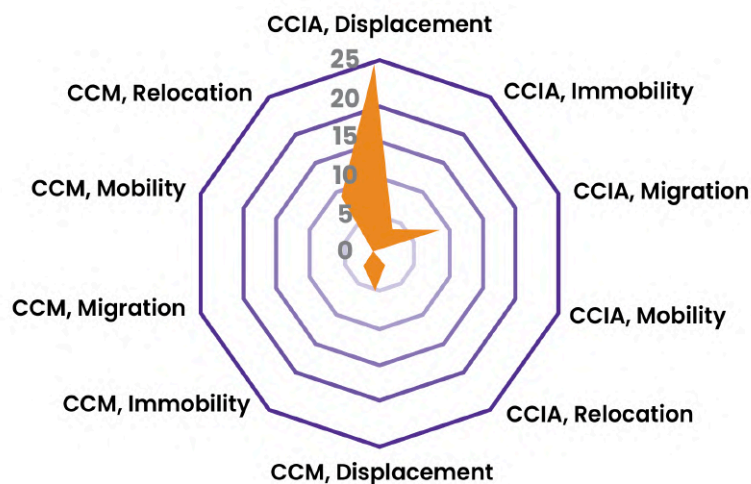


Figure 34. South and Southwest Asia knowledge

Based on the identification of CCIA and CCM (Figure 34), the majority of research in SSWA focuses on CCIA displacement. More interest in this issue is explained by the range of climate-related hazards present in the region, including extreme rain (Turner & Annamalai, 2012) and flooding (Mirza, 2011). The data suggests more attention should be devoted to further developing knowledge around climate change impacts and adaptation for the region. However, as the result indicates, CCIA and displacement are still the main focus of research within the region. This leaves a broad range of research potential to be explored and promoted, especially around CCIA and planned relocation, as research here may provide the region with better adaptation options for major climate change impacts in the future.

### 4.1.3 Pacific

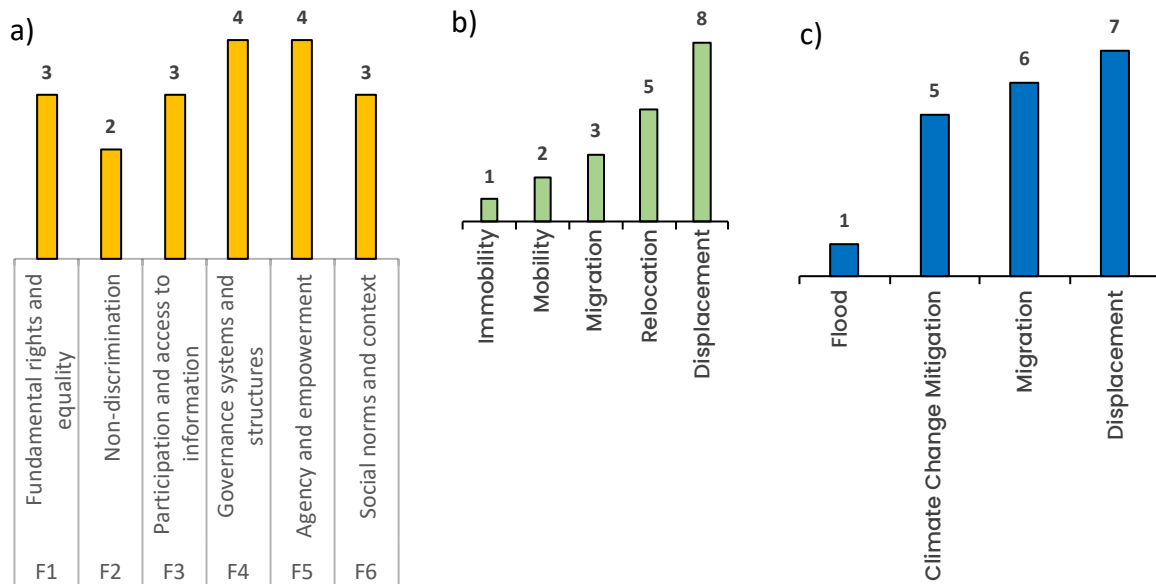


Figure 35. Literature knowledge landscape in the Pacific sub-region according to a) FIRE dimension, b) type of mobility, and c) climate impacts (n=29)

The patterns found in the data from the Pacific sub-region are quite different to those found in Southeast, South, and Southwest Asia (Figure 35). In the case of the FIRE dimensions, all six are studied fairly equally. Whilst on mobility type, forced displacement is also found to dominate the conversation of human mobility. Topics around general climate change impacts, adaptation, and mitigation are comparably studied, however, specific climate change-related hazards are less commonly explored.

The knowledge patterns for the Pacific sub-region can be observed in Figure 36, which indicates the majority of research focuses on CCIA displacement with topics of CCIA relocation and mobility also featured. It further indicates that between CCM and CCIA, research on the Pacific sub-region is more focused on CCIA, since the region is among the most affected by climate-related hazards, most notably rising sea levels (Gero et al., 2011; Mimura, 1999). While arguably CCIA research is more needed in the Pacific sub-region, Figure 36 indicates there is still potential for CCM research to be expanded as well (Cameron et al., 2021). Furthermore, regarding CCIA research in the Pacific, this study identifies early attempts at addressing issues based on a gender perspective (Lane & McNaught, 2009), indicating a potential for growth around this type of research.

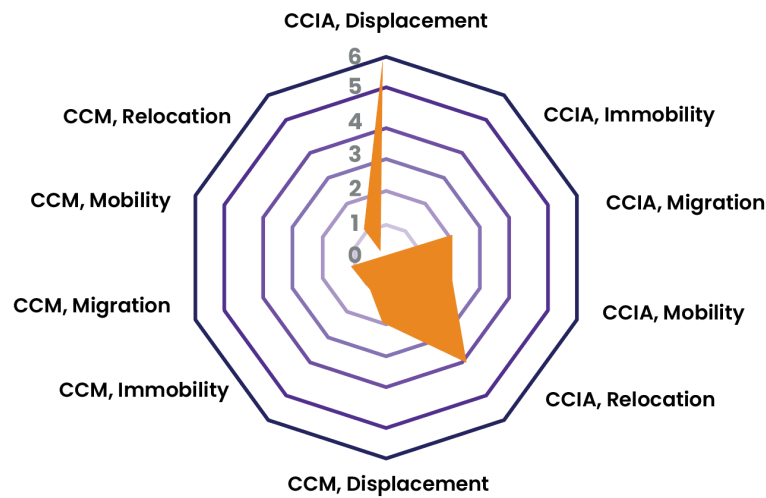


Figure 36. Knowledge in the Pacific sub-region (n=29)

In the Pacific sub-region, a number of studies from the dataset examine issues of adaptation and development in a changing climate via transformative mobility. For example, Farbotko et al. (2018) argue that Pacific people often choose mobility as one of the strategies against climate change. Any support for this type of mobility choice, however, must consider the creation of opportunities that are responsive to the histories and existing patterns of mobility and place attachment among Pacific Islanders, commence from a position of climate and development justice, and should advance human rights and socio-political equity. Transformative mobilities are where mobility, adaptation, and development intersect to achieve the best possible outcomes for cultural identity, human rights, adaptation, and human development goals across scales, in both origin and destination sites.

## Box 2. Knowledge landscape of parallel sessions of the conference



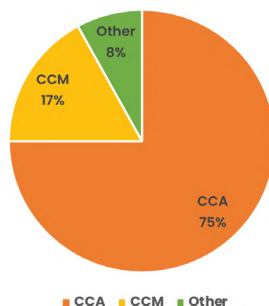
The Asia Pacific Conference on Climate Change, Human Mobility, and Human Rights Nexus (hereinafter the APANDD Conference) hosted 27 presentations, covering six different themes on current and emerging research and knowledge in the field. The six different themes encompassed state-level protection, slow-onset disasters and food security, planned relocation and resettlement, gendered impacts of climate change, communities at risk, and environmental justice.

Analysis of the abstracts from these presentations showed that 75% concerned climate change adaptation, 17% climate change mitigation, and the rest with other aspects of climate change. In the discussion about cross-cutting issues, issues about social inclusion toward elderly people, persons with disabilities, and Indigenous peoples make up 41%. Another cross-cutting issue discussed is a partnership comprised of the state, the international community, and businesses.

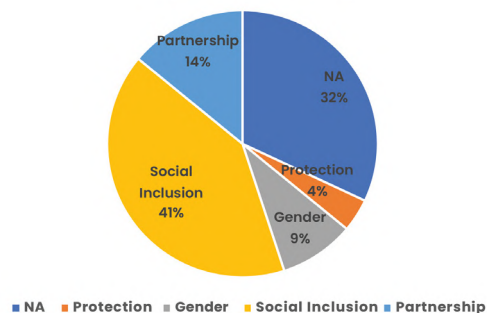
Issues of gender and protection were also partially discussed in other sessions outside their allocated themed sessions, indicating a growing acknowledgment of the importance of the gender lens. A recurring issue discussed during the conference is increasing concerns about access to clean water. However, such discussions have yet to explicitly address the issue from a human rights perspective, as there was no explicit mention of the right to water.

Evaluating the type of mobility, 46% of abstracts studied human mobility in general, 33% studied displacement, 17% looked at migration, and the last 4% mentioned immobility. The Southeast Asia sub-region was the most popular location, with half of all abstracts based in the area. South Asia was the second most studied, while 8% of studies were spread across several sub-regions, and 4% specifically studied the Pacific

**Climate Change Focus**



**Cross-cutting Issues**





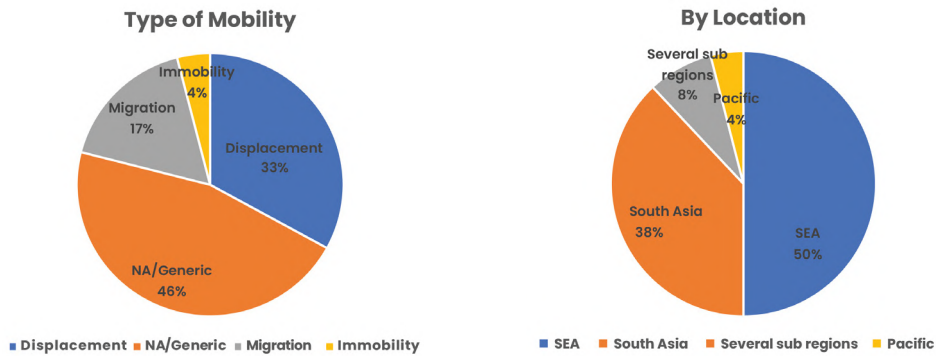


Figure 37. Percentage breakdown of abstract on the parallel session regarding climate change focus, cross-cutting issues, type of mobility, and location studies (n=30)

Furthermore, Figure 38 shows the most frequently mentioned words by the participants of the conference upon presented by the initial findings of this report. As can be seen, disaster, inclusion, mitigation, immobility, FIRE, and flood, as well as science-policy related terms: interdisciplinary, meta-analysis, and research gap were the most frequently mentioned terms.

**Name five words/phrases that resonate the most with you from this presentation**



Figure 38. First impression of the conference participants to the literature review progress

## 4.2 Knowledge entrepreneurs on climate change, human mobility, and human rights in the Asia Pacific

### 4.2.1 Knowledge entrepreneur: main author origin, affiliation, locus of study, and potential spillovers

In general, Figure 39 reveals that most research comes from researchers with affiliation based in the United States, with China and Australia the second and third most productive. The locus of research studied by researchers with affiliation in the United States is fairly distributed across Southeast Asia (SEA), South and Southwest Asia (SSWA), and the rest of the globe (without focusing on specific regions in Asia and the Pacific). In SEA, Indonesian institutions produce the most knowledge on climate change, human mobility, and human rights, with other Southeast Asian countries such as Viet Nam and Thailand also contributing well. However, this diagram also reveals there is the potential to support, enhance, and increase contributions from other Southeast Asian states, including Malaysia. In other regions, China's highest contribution is in East and Northeast Asia (ENEA), and to a lesser extent in SSWA. Japan also produces a small amount of research on ENEA and SEA, while research from South Korea hasn't been able to be registered in this study. The distribution of country of origin in SSWA is divided mostly between India, Bangladesh, and the United States, revealing that local knowledge is having an important contribution in SSWA, while in the Pacific, most research comes from Australia as indicated in Figure 39. To conclude, local research institutions from Asia and the Pacific should be elevated and prioritized to lead research at the nexus of climate change, human mobility, and human rights. Research grants and funding should focus on ensuring local institutions are given the mandate to lead research in their regions, whilst also maintaining the collaborative research trends identified in the data.

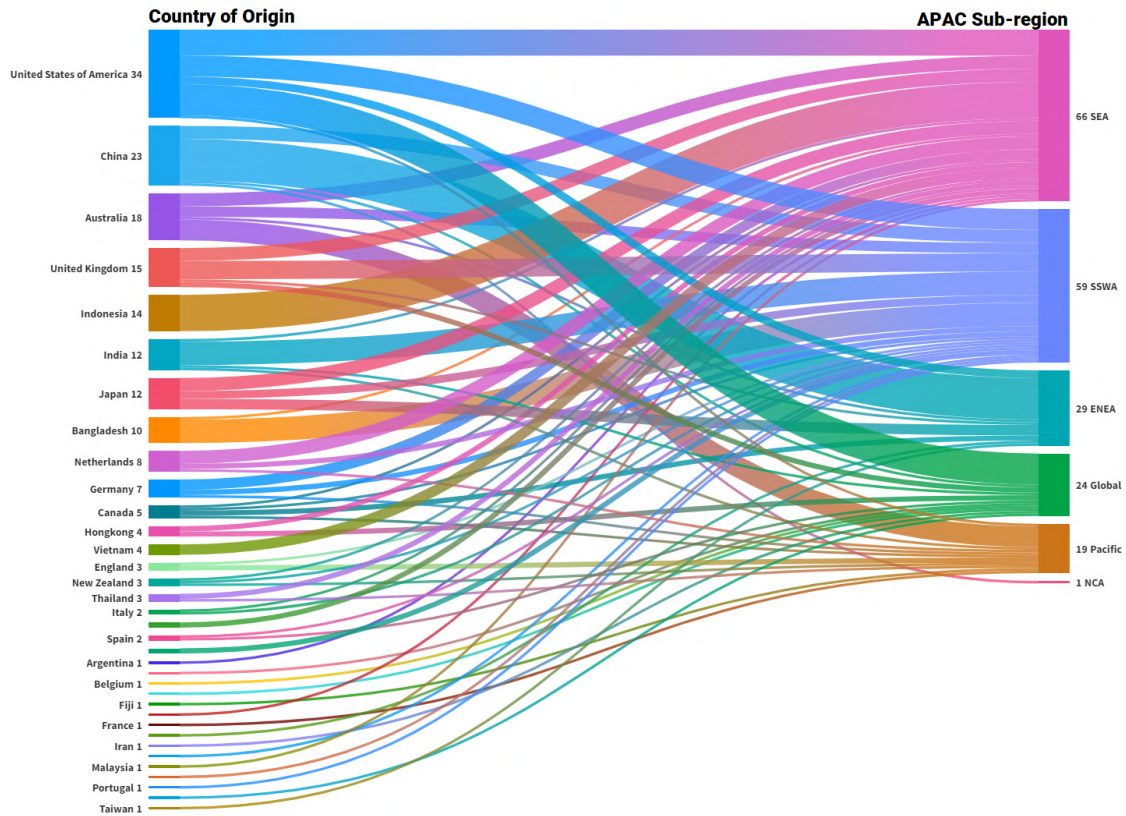


Figure 39. Country of origin (researcher's institution) - research locus in Asia Pacific sub-regions (n=188)

There may be a potential knowledge spillover from the scientific communities to policy communities in these realms, which has been covered also in Section 3.2. To detect this, the report also looks at whether there are similarities in the pattern between the flow on “research institute country of origin and study locus” (as shown in Figure 39) *vis a vis* the flow between “UPR recommending states to countries concerned,” which is shown in Figure 40.

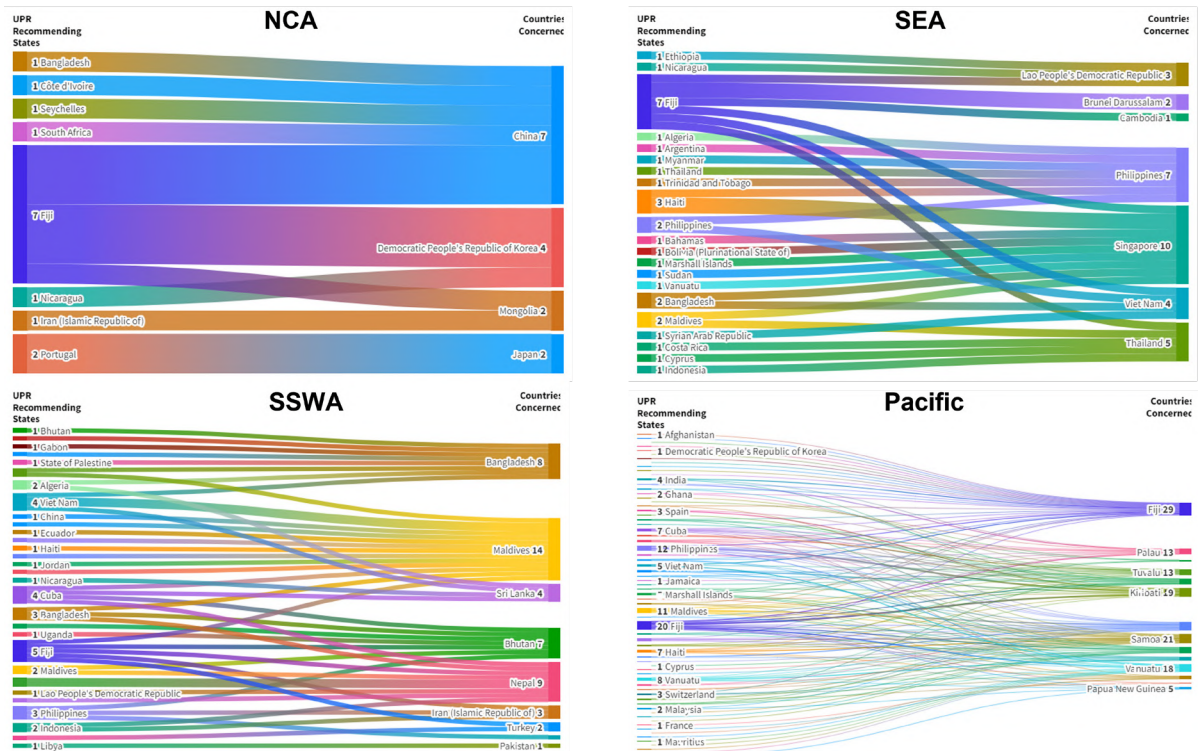


Figure 40. Flow of UPR recommending states and countries concerned

The flow in Figure 40 shows the Flow of Universal Periodic Review (UPR) recommending states with countries concerned. Based on the UPR data (OHCHR, 2022), Fiji was the most active country in providing recommendations to other countries, topping the chart in every Pacific sub-region by providing seven recommendations for North and Central Asian countries (NCA) and Southeast Asian countries (SEA), 20 recommendations for countries in the Pacific, and five recommendations for South and Southwest Asian countries (SSWA). For the Pacific sub-region, UPR human rights recommendations for the Pacific were distributed evenly between countries, ranging from one to three recommendations, excluding Fiji, which consistently provided recommendations to countries in the same region with 20 recommendations. The dataset reveals that for the SEA sub-region, human rights recommendations come from countries mostly in the Global South, such as from Africa (such as Ethiopia and Algeria), the Middle East (such as Syria), the Caribbean (such as Haiti and Trinidad and Tobago), or from the Pacific (such as Fiji). This is mirrored in the South and SSWA sub-region, with Maldives receiving the most recommendations while Fiji, Cuba, and Viet Nam provided the most recommendations.

This distribution is quite different if we look at Figure 40, where most knowledge entrepreneurs are located in the Global North. This gap reveals a potential to encourage knowledge creation between stakeholders that consider UPR a potential channel for enhancing human rights protection in the context of climate change and human mobility.

#### **4.2.2 Knowledge entrepreneur: institution's origin and FIRE dimension**

We also sought to understand the links between institutions' country of origin, locus of research, and the dimension of FIRE examined. This was done in order to understand who takes on the role as "knowledge entrepreneur" (Bouchikhi & Kimberly, 2001; Rowley, 2000). Identifying this implies two things. First, it provides us with the identification and mapping of main institutions and researchers addressing the issues in every sub-region, enabling potential research collaboration in areas relevant to climate change, human mobility, and human rights. Second, this identification may also serve as justification to strengthen and facilitate knowledge creation from within the sub-region to enrich current knowledge with more local experience. The potential of strengthening and assisting knowledge creation in climate change, human mobility, and human rights may be higher in countries where research gaps exist, or the knowledge creation process is hampered by various challenges.

We build on the identification of knowledge entrepreneurs by linking them with the FIRE dimensions they address, shown in Figure 41. Fundamental rights and equality (F1) were addressed by institutions from the United States to capture the global phenomenon, while research that focused on the Pacific sub-region was mostly conducted by institutes from Australia and the Netherlands. In SEA, Indonesia is still the prominent country of origin, while there is an absence of research on the F1 dimension from institutions based in SSWA and the sub-region. This necessitates further collaboration with research institutes based in SSWA as the lead author on issues of fundamental rights and equality in the context of climate change, human mobility, and human rights. This report advocates the importance of who leads research based on the consideration that lead authors often take the role of the principal investigator and thus may provide more opportunities and knowledge distribution for Global South researchers, as well as the potential of a more local perspective in conducting the research. Furthermore, the diagram indicates that research on NCA and ENEA also needs to be promoted.



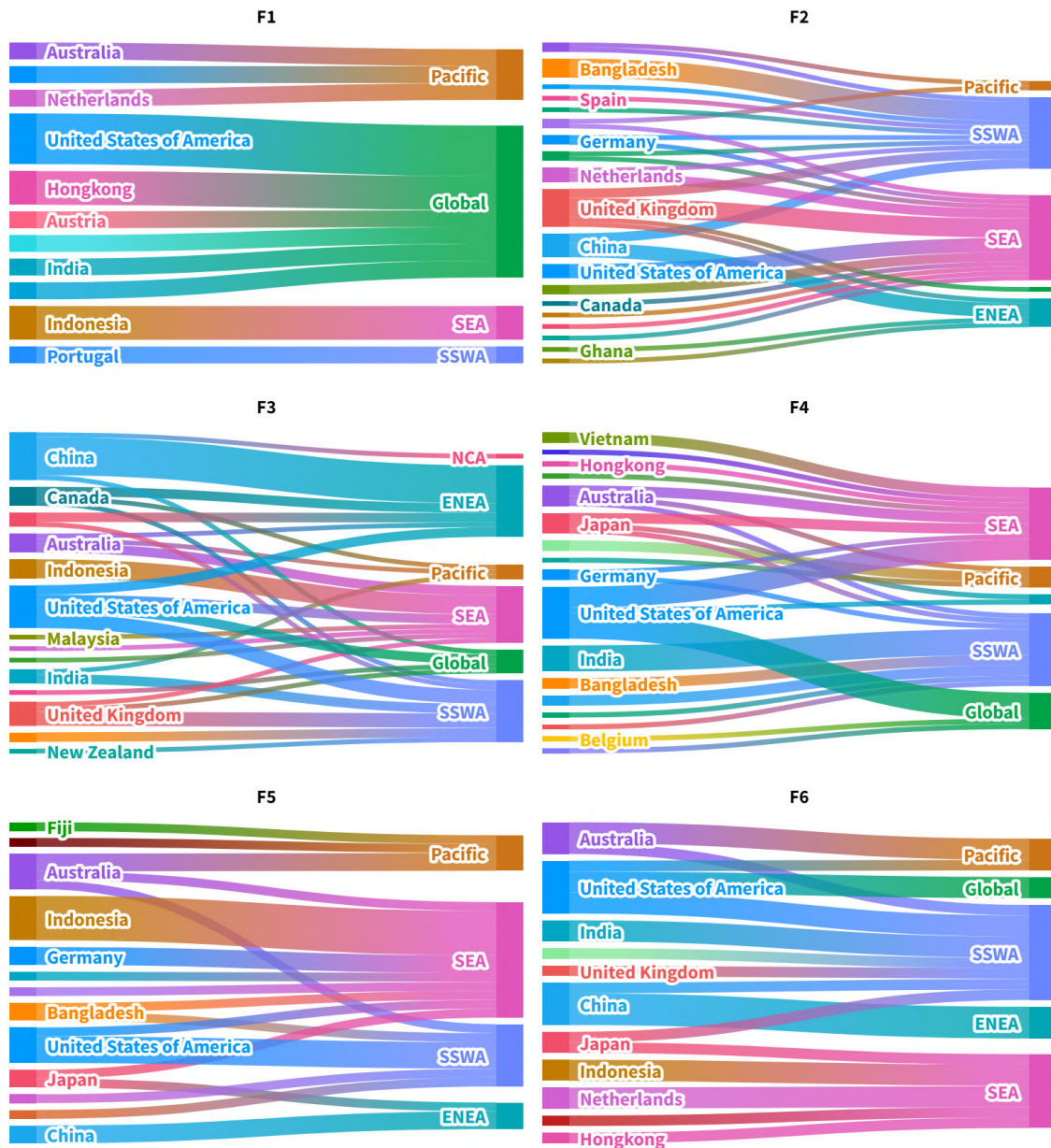


Figure 41. Sankey diagram of type of FIRE dimension, country of researchers' institution (left), and research locus (right) (n=188)

For the second FIRE dimension of non-discrimination (F2), the distribution of country of origin and research locus is fairly diverse, with Bangladesh as the top origin for research on SSWA, the United Kingdom for research on SEA, and China for ENEA. Research potential in the NCA and Pacific sub-regions is still high and should be promoted, while research from within the SEA sub-region on issues of non-discrimination should also be encouraged and facilitated.

Research on participation and access to information (F3) is evenly distributed by country of research institution origin and research locus. We recorded research on all regions, with China, Indonesia, the United States, and the United Kingdom as the top origins of institutions. Research on NCA and ENEA mainly originates from institutions in China, while for SEA, the contributions originated from Indonesia, Australia, and the United States. In SSWA, it seems we need to encourage more local research institutions to take leading roles in research on participation and access to information. India and Bangladesh are the most likely candidates here since research institutions from both countries also have produced research in other FIRE categories (such as Bangladesh in F2 and India in F4). Countries with strong academic publication records such as Malaysia in SEA, Japan in ENEA, and Fiji and Vanuatu in the Pacific should also be encouraged and facilitated. This is especially important if we want to further understand research on F3 and other factors from a local perspective.

Looking at FIRE dimension F4, the diagram indicates that research on governance systems and structures in NCA and ENEA is still limited. Regarding ENEA, research potential is not only limited to what is missing and what needs to be enhanced but also could include cross-regional comparisons to propose models for good practice. In SSWA, a high amount of research comes from within the region, with India and Bangladesh as the top two countries of origin. This is a trend that should be replicated and promoted in SEA, since a high amount of research comes from outside the region, with the United States and Japan the top countries of origin for SEA.

For FIRE dimension F5 (agency and empowerment), research on and from NCA countries needs to be encouraged since the diagram reveals there is limited research produced by or about the NCA region. We found that most research focused on SEA, with works coming from Indonesia, Germany, the United States, and even Bangladesh. The diagram reveals that research institutions from Fiji have a strong background in research examining the F5 dimension in the Pacific sub-region. This result presents a high potential for further enhancement and support so the strong presence of local institutions can be developed. Meanwhile, local institutions from the SSWA region should be further encouraged.

On FIRE dimension F6 (social norms and context), the diagram reveals that most research is conducted with SSWA as the research locus, followed by SEA. Research on ENEA mostly originated from China, while in SSWA and SEA, countries of origin are fairly distributed. However, local institutions in SSWA and SEA still need further encouragement to lead research, as is the case with the Pacific sub-region. Research from SIDS should also be encouraged and facilitated.

## 4.3 Climate change, human mobility, and human rights research pattern, trends, and gaps – case studies

### 4.3.1 Sample of insights at the sub-regional level (Mekong sub-region)

Climate change, as one of the triple planetary crises, is likely to significantly impact peoples' enjoyment of human rights and subsequently amplify the impact of inequalities and injustices (OHCHR, 2015). Accordingly, growing concerns around this have prompted a heightened interest and recognition of the linkages between climate change, human mobility, and human rights within the human rights literature – from both legal and practical perspectives (Garlick & Michal, 2022; Yamamoto et al., 2017). Among the global efforts to address these issues is the recently recognized right to a healthy environment, which sets out the basic obligations of states under international human rights law as they relate to the enjoyment of a healthy environment (Cima, 2022). This has subsequently led to an expansion of research and studies on how to operationalize this international legal framework and encourage its implementation. These studies are now establishing a framework for determining the duties of states and the entitlements of rights-holders. For example, governments in mainland SEA, i.e., countries in the Mekong River sub-region, are increasingly making commitments and policies on climate change mitigation and adaptation. Despite this, human mobility due to 'slow onset' climate-related hazards seems to be less acknowledged and addressed (Danh, 2019a; Nguyen & Sean, 2021). Accordingly, this section explores the dataset to identify any literature that includes empirical case studies in any of the Mekong sub-region countries to identify the relevant pattern and gaps of the CCHMHR nexus.

As can be seen in Figure 30 (pp. 50), of the 164 research articles reviewed, 66 of them included case studies from SEA. 21 of these addressed at least one aspect of the CCHMHR nexus in at least one Mekong sub-region country. The Mekong sub-region countries are those along the Mekong River basin, including Cambodia, China, Lao PDR, Myanmar, Thailand, and Viet Nam. However, due to the limited availability of information to classify research papers on China to enable additional focus on the Upper Mekong basin, the study limits its scope of research to Southeast Asian countries only. The distribution of research on Mekong sub-region countries shown in Figure 42.

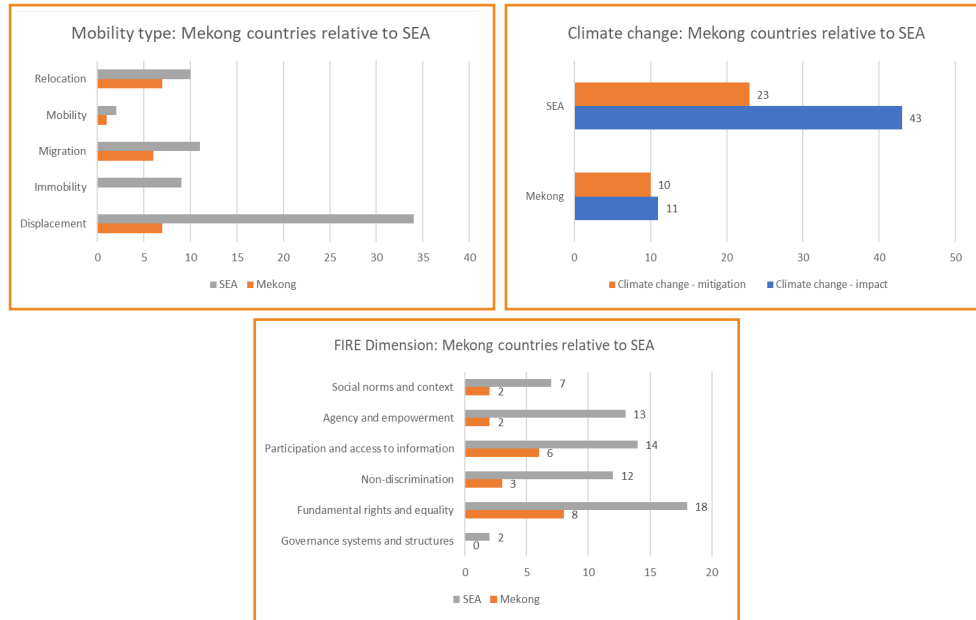


Figure 42. Distribution of research articles about Mekong sub-region according to type of mobility, climate change aspects, and FIRE dimension (Analysis, 2022)

Figure 42 shows the type of mobility discussed in the articles, the climate change aspects referenced (i.e., mitigation or adaptation), and the dimensions of FIRE addressed in the 21 research articles. The pattern shows similarities with the knowledge landscape of CCHMHR research in SEA more generally. Based on mobility type, research in the Mekong sub-region rarely focuses on issues of immobility, while several sources look at issues in SEA as a whole. The Mekong sub-region as a locus contributes evenly to research on displacement, while most work on migration and relocation in SEA comes from the Mekong sub-region. Research between climate change impacts and mitigation was evenly distributed across the Mekong sub-region, while that is not the case in SEA. Focusing on FIRE dimensions, most research in the Mekong sub-region focuses on fundamental rights and equality, followed by participation and access to information. However, this study encourages further research on governance systems and structures both in the Mekong sub-region and SEA, since research in this space is very limited.

In terms of the climate change-related drivers that trigger human mobility in the Mekong sub-region, nearly half of the literature describes the combination of rapid-onset and slow-onset climate-related hazards as the main cause – especially tropical cyclones, floods, and landslides. Concerning the typology of planned relocation spatial patterns of Bower and Weerangsinghe (2021),

the mobility in the Mekong region ranges from type A (single origin to a single destination, with four cases from Viet Nam), type C (single origin to multiple destinations, with 10 cases from Viet Nam), and type D (multiple origins to multiple destinations, with three cases from Viet Nam and one case from Myanmar). The report does not find any research that documented mobility classified in type B (multiple origins to a single destination).

Planned relocation cases in Viet Nam are predominantly caused by floods (documented in 14 of the total 17 articles), while others are caused by landslides (2) and storms (1). We found that type C was the main type of planned relocation in Viet Nam, exemplified by the relocation of the Tan Chau district of An Giang Province due to major flooding in 2000. Type A relocations, which observe a relocation from one location to a single destination, can be found in the Nam Puoi village relocation to Doi Ho Bom, due to a landslide. Type D relocations in Viet Nam can be observed in events such as the Hòa Bình Relocation Project in Viet Nam, which involved two remote villages at high risk of landslides that were relocated to three destination sites. Study by Danh (2019b), focuses on the Long An commune of Tan Chau district of An Giang province. It indicates that the resettlement program had problems of inadequate financial support, unsustainable livelihoods, poor infrastructure, and no change in income sources and employment since they relocated to resettlement clusters. However, the study found that despite unsatisfactory living conditions, almost all respondents were happy living in the resettlement clusters. The study further suggests that economic development strategies at the national level need to be consistent with the living-with-flood policy, while at the local level, authorities need to persuade people to change practices and choose ways to live with and adapt to flooding through the provision of alternative adaptation strategies. Our results indicate that elements of governance systems and structures (F4) and agency and empowerment (F5) must be better integrated within domestic policy and practice.

Another article found two cases of recurrent displacement in the Tam Nong and Ngoc Hien districts, Viet Nam. In these cases, people chose to move again after resettlement projects, due to inequalities and an inability to recover and adapt to their new location (Miller et al., 2022). Environmental deteriorations in the Tam Nong district, such as floods, loss of fish, rising temperatures, and a decline in water quality created societal challenges. There was a similar situation in Ngoc Hien district, with dwindling access to land, fish, and forests, coupled



with an increase in poverty driving people to move a second time (Miller et al., 2022). In Bo Hon village, strategies were put in place to reduce the level of disruption to the villagers' livelihoods after resettlement, but some parts of the compensation package were short-lived or inequitably distributed (e.g., land), while infrastructure developments such as sealed roads have made the village far more accessible to Hue City some 25 km away ( Nguyen et al., 2017). However, planned relocations can be a positive adaptive process (McAdam & Ferris, 2015; Thaler & Fuchs, 2020). To do this, they must be meticulously planned, with all relevant stakeholders involved, and most importantly the community themselves actively participating in all stages of the relocation process (Nalau & Handmer, 2018; Singer et al., 2014).

One group facing critical uncertainty due to climate-related factors are the farmers in the Lower Mekong sub-region. Unfortunately, these communities are unlikely to be able to mitigate or adapt to the impacts of climate change. This indication can be observed, for example, from a study by Nguyen & Sean (2021) who studied farmers' experiences of climate change, their mobility patterns, and the factors behind migration in Kampong Cham province, Cambodia, in the Lower Mekong sub-region. The article found that farmers of small and medium farms had more household members who migrated. These farmers perceived more climate variability and impacts than those with larger farms. Since smallholder farmers have limited capital and capacity to cope with climate impacts, any disruptions to agricultural productivity are likely to significantly impact their food security, income, and broader livelihoods (McDowell & Hess, 2012). The absence of alternative livelihoods outside the climate-threatened agricultural sector has pushed farmers to move and seek other livelihoods in cities. This article offered one example of how climate change may induce human mobility and its relation to human rights issues, in this case, fundamental rights around basic living standards.

These studies highlight the contested nature of the complex relationship between human mobility and global climate change. Rural households across the Global South, particularly those under the poverty line, are currently being transformed by governments and academics into mobile (or immobile) agents for adaptation (Natarajan et al., 2019). However, when these households are deemed to have failed to adapt (which is often a top-down judgement), they are often blamed for their own failure (Watts, 2015). This may only present half of the picture; analyzing

how climate change affects human mobility patterns needs to also include broader structural determinants, power relations, and micro-level factors that co-determine these patterns. Furthermore, more research is needed to understand how adaptation regimes, as well as structural determinants and power relations, affect rural and poor households (Bayrak et al., 2022).

#### 4.3.2 Sample of insights at the country level (Indonesia)

The second test case we used was Indonesia, which we covered alongside this project in Indonesia Disaster Knowledge Update (IDKU) October 2022 edition titled “Research Publications about Disaster, Human Mobility, and Human Rights in Indonesia.” Although IDKU generally included disasters of various types, not just climate-related disasters, in the October 2022 update, the majority of disasters studied did have climate-related aspects (e.g., flood, multi-hazards, landslide, coastal abrasion). The research articles were analyzed with CARI! Knowledge Engine and sourced from Scopus, DOAJ, and Portal Garuda repositories (Figure 43). Based on a multi-stage filtration process, we used 30 keywords.<sup>6</sup> Of the 192 research articles that matched these requirements, 99 were written in English and 93 in Indonesian. The inclusion of articles written in Indonesian indicates there is indeed more research available in local languages, which are more accessible to local audiences. There is significant potential to expand knowledge at the nexus of climate change, human mobility, and human rights by incorporating and disseminating this important non-English knowledge. This highlights the potential for a research network on human mobility, climate change, and human rights to be developed that seeks to bring this localized knowledge to a wider audience.

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<sup>6</sup>Keywords refer to Table 2, except keywords that are related to climate change mitigation and outside of Indonesian context.

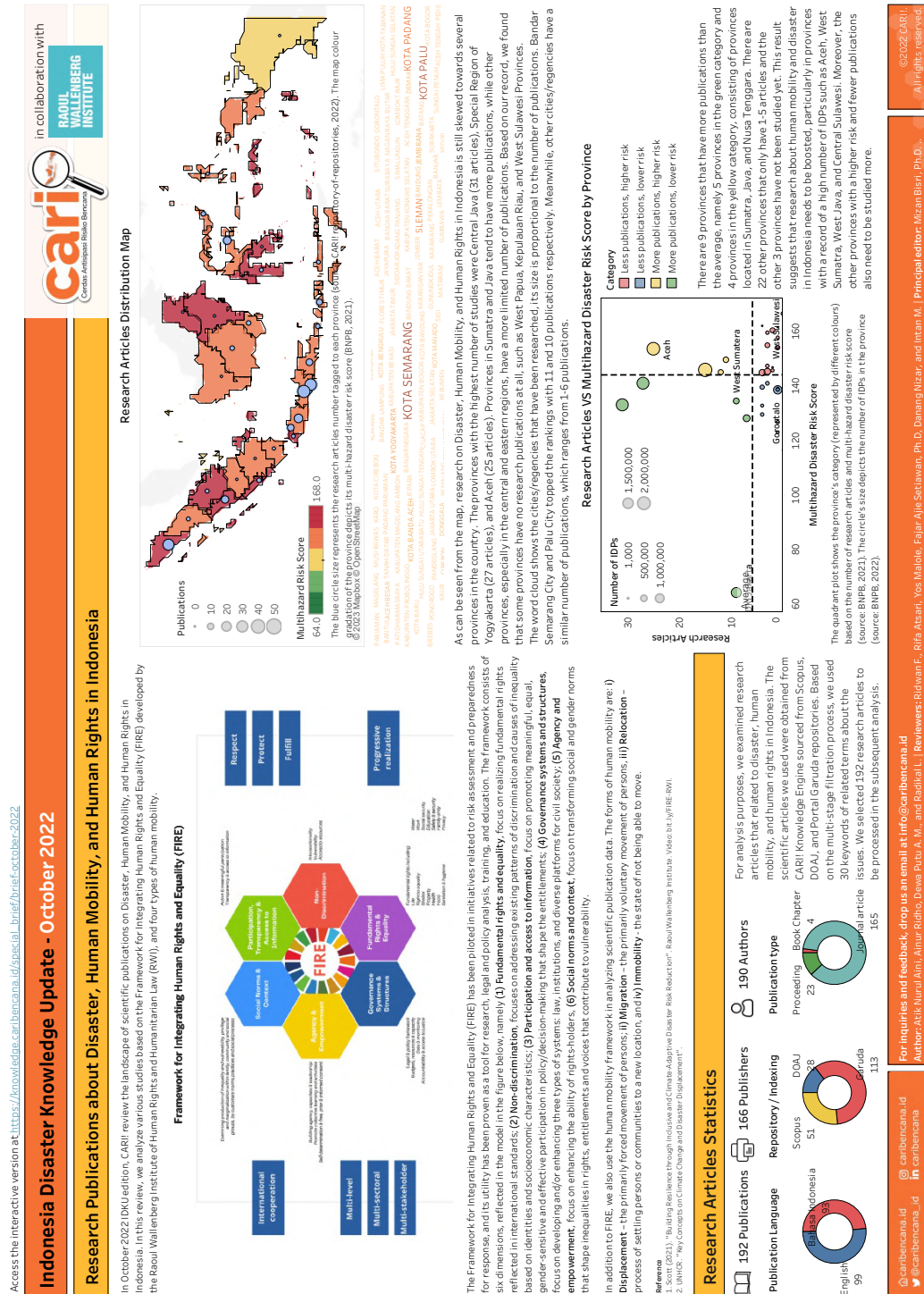


Figure 43. Example of potential insights at country level – Indonesia Disaster Knowledge Update 2022 October edition covered an analysis of literature studies about the disaster, human mobility, and human rights in Indonesia (n=192)

As the map in Figure 44(a) shows, research on climate-related disasters, human mobility, and human rights in Indonesia is still skewed towards a few select provinces in the country. The provinces with the highest number of studies were Central Java (31 articles), the Special Region of Yogyakarta (27 articles), and Aceh (25 articles). Provinces in Sumatra and Java tend to have more publications, while research in other provinces, especially in the central and eastern region, is more limited. The data shows some provinces have not been researched at all in this context, such as West Papua, Riau Islands, and West Sulawesi provinces. The word cloud, as seen in Figure 44(b), shows the cities/districts that have been researched, with size proportional to the number of publications. Semarang and Palu city topped the rankings with 11 and 10 publications respectively. Meanwhile, other cities/districts have similar numbers of publications, ranging from one to six publications.

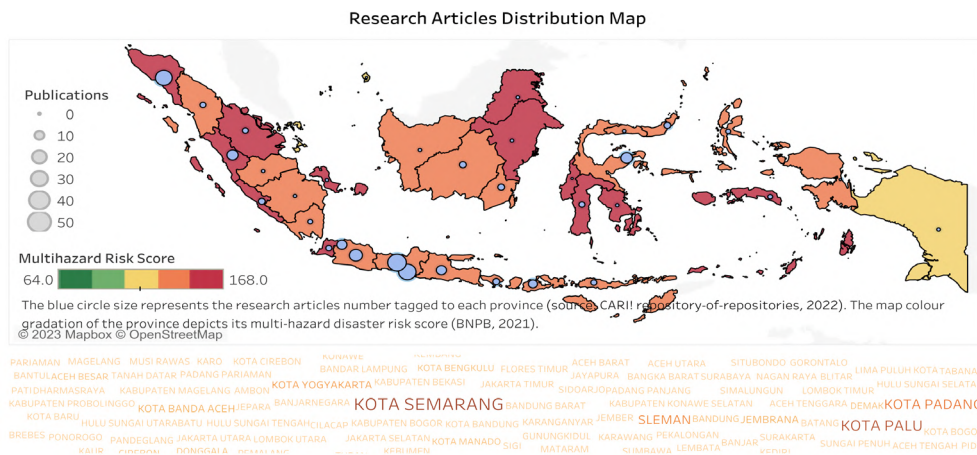


Figure 44. (a) Map of research literature number per province in Indonesia overlaid with its multi-hazard risk score (b) Word cloud of city/district that have existing research literature (n=192)

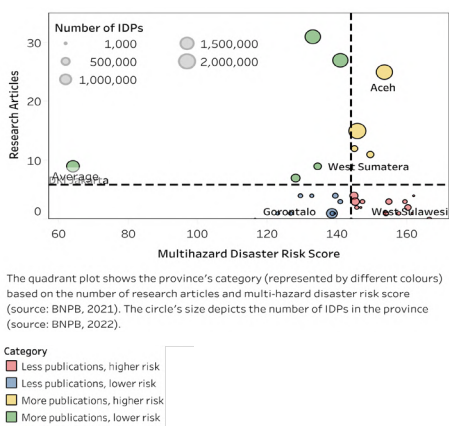


Figure 45. Quadrant chart of number of research literature vs. multi-hazard disaster risk score by province in Indonesia (n=192)

As indicated in Figure 45, nine provinces have more publications than the average, namely five provinces in the green category and four in the yellow category. These provinces are located in Sumatra, Java, and Nusa Tenggara. 22 other provinces are referenced in only one to five articles and three others are yet to be studied. This suggests that research about human mobility and climate-related disasters in Indonesia needs to be boosted, particularly in provinces with a

higher number of IDPs such as Aceh, West Sumatra, West Java, and Central Sulawesi. Moreover, other provinces with high levels of risk and exposure, but fewer publications, also need to be studied more.

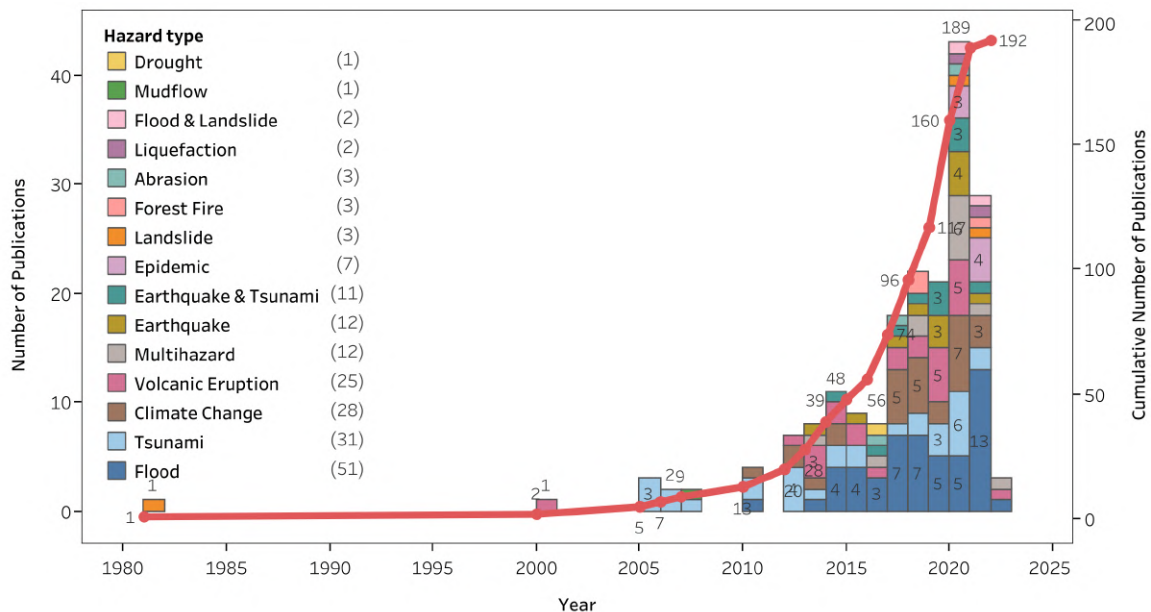
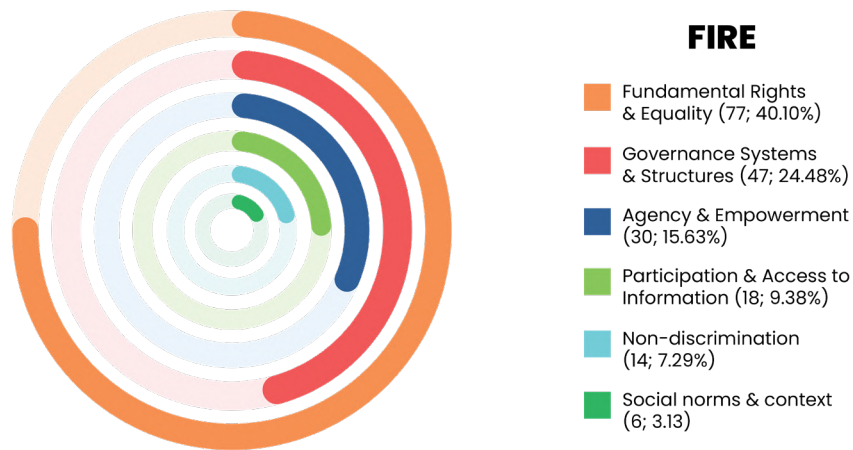


Figure 46. Number of research publications per year with colour code of hazard type (n=192)

By referring to Figure 46, we can see that research on these themes in Indonesia has only existed since early 2000. After a brief decline, there was strong growth from 2010 onwards. The increase in research on disasters and human mobility is likely linked to the 2004 Aceh tsunami and the 2010 Mt. Merapi eruption. Studies often focus on floods, tsunamis, climate change, and volcanic eruptions. In 2022, research on these issues declined, with only three publications recorded.

Most publications (Figure 47) examined human rights issues in regard to fundamental rights and equality (134 publications). As an example, Nurhidayah (2021) argues that approaching human rights issues within the context of sea-level rise requires integrating a comprehensive human security approach into current national frameworks to specifically protect three freedoms closely linked with fundamental human rights: freedom from fear, freedom from want, and human dignity. Such integration may further ensure the enjoyment of basic human rights (Nurhidayah, 2021, pp. 38–40).





### Human Mobility Typology

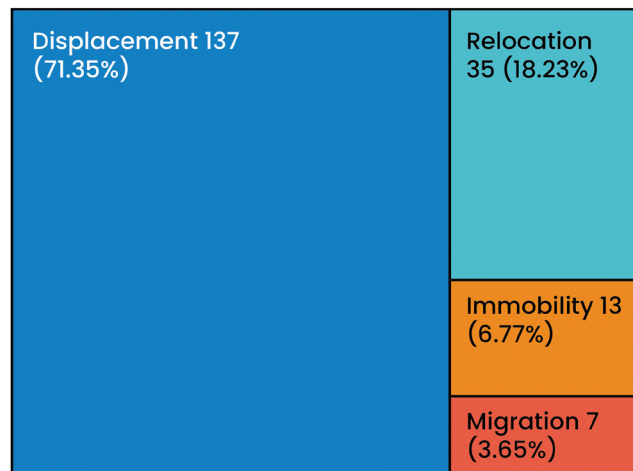


Figure 47. Number of literatures in regard to six dimensions of FIRE, and human mobility typology (n=192)

Furthermore, 23 articles examined human rights issues around governance systems and structures, as indicated in a study by Silver (2018), which looks at the policy and regulatory conflict between alternative city development policies and potential rights violations due to the massive displacement of low-income residents it requires. Concerning the human mobility typology, most publications focus on displacement (137 publications) and relocation (35). Other mobility types studied include immobility (13) and migration (7) as well.

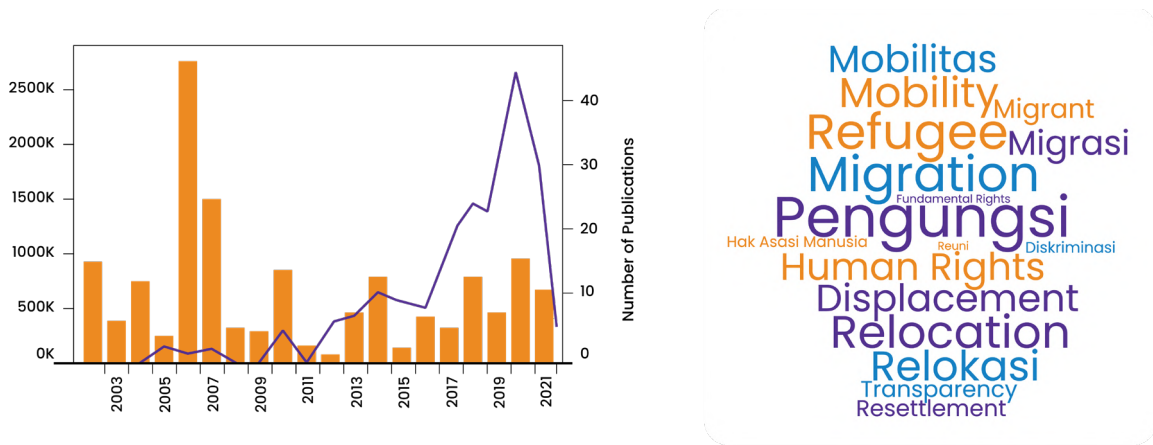


Figure 48. (a) Number of IDPs vs. number of research publications per year in Indonesia  
(b) Word cloud of most mentioned keywords in each literature (n=192)

Figure 48 shows the fluctuations in the number of new IDPs by year. The purple line shows the increasing trend of research articles relating to climate-related disasters, human mobility, and human rights. This positive trend shows an increased awareness of these issues from the research community. Based on the list of keywords used, “pengungsi” (Indonesian word for refugee) and “refugee” are most frequently found in the literature, although refugee is often used to refer to IDPs in these cases.

The Sankey diagram in Figure 49 visualizes the relationships between specific hazards, types of human mobility, disaster management phases, and FIRE dimensions. The larger boxes and wider lines indicate a greater number of publications on the topic. Floods and tsunamis are the two most frequently studied hazards, followed by a variety of other climate change impacts and volcanic eruptions. In almost every type of hazard, the human mobility typology discussed is displacement and relocation. Both these topics are highly linked to the recovery and response phases of disaster management, showing the issue of human mobility is still more widely studied in the post-disaster phase than the prevention and mitigation phases.

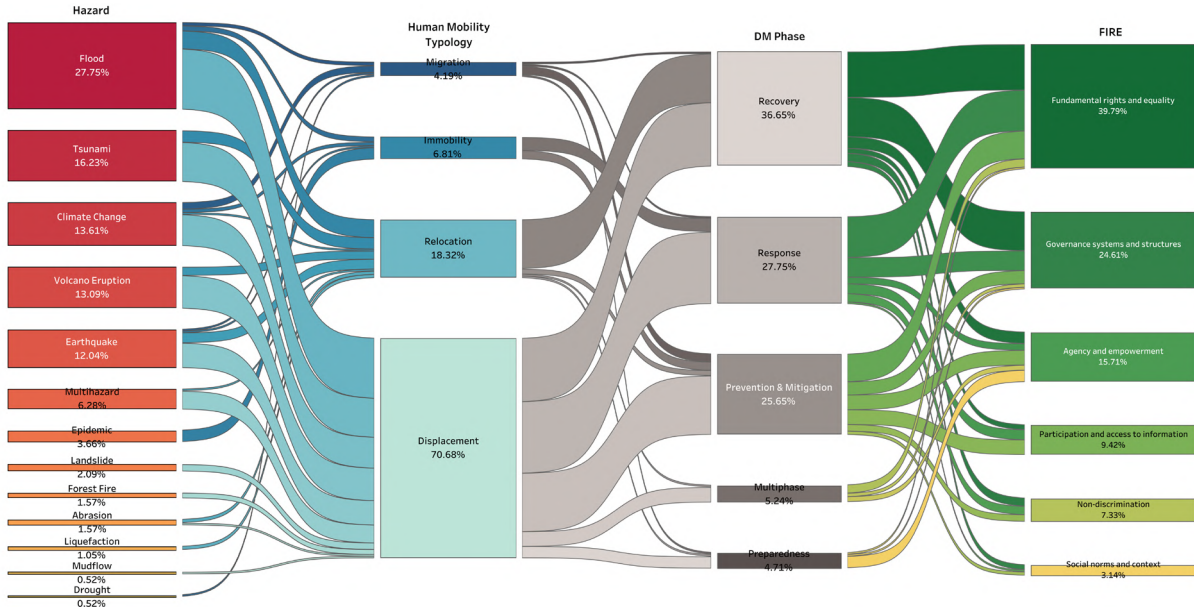


Figure 49. Sankey diagram of literature inter-relationship between hazard type, human mobility typology, disaster management phase, and FIRE dimensions (n=192)

The abovementioned results show that climate change issues have raised awareness of conceptual research relating to human mobility. Based on the links between disaster management phases and dimensions of FIRE, the frameworks most studied are fundamental rights and equality, and governance systems and structures, but there is a dearth of research on issues of non-discrimination or social norms and context. Research needs to be further enhanced not only in the context of fundamental rights and governance, but also in non-discrimination and social norms and context.

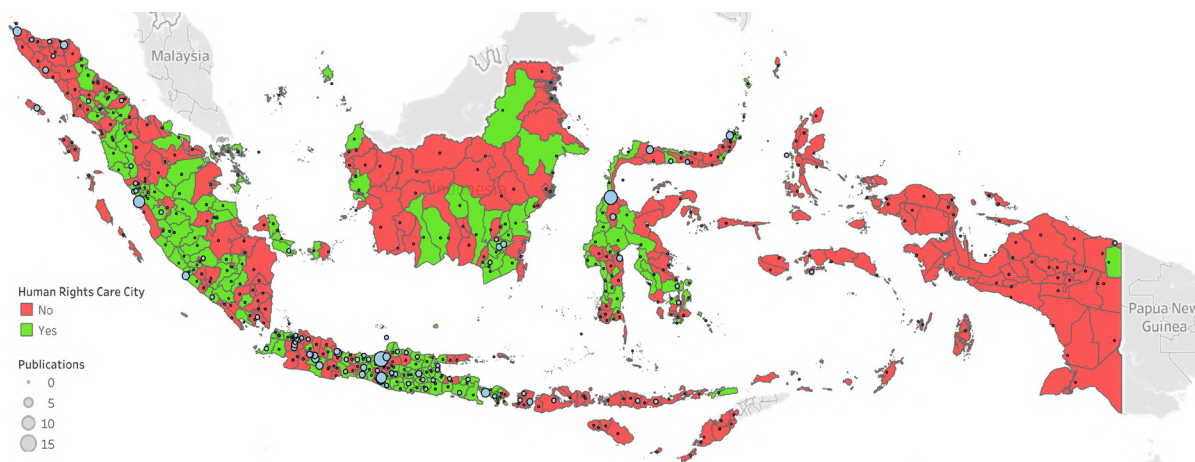


Figure 50. Map of cities/districts with a status of Human Rights City Award and its research publication number (n=192)

The Human Rights City Award was awarded by the Directorate General of Human Rights, Ministry of Law and Human Rights of the Republic of Indonesia. As Figure 50 shows, cities/districts conferred with this award are found mostly on the islands of Java and Sumatra, with very few in Nusa Tenggara and Papua. The figure also shows the number of publications in each area, with some correlation between the number of publications are whether cities/districts have this award. The increase in scientific publications may be influenced by various factors, e.g., increased awareness from local governments, national-level regulatory and policy change, and demands from civil society and citizens. However, this study encourages each city/district to be more receptive and supportive towards enhancing human rights protections, or even fully adopt a human rights-based approach in its governance frameworks. The impact of scientific publications needs to be followed up sustainably so that it can encourage the fulfilment of human rights, especially those related to disasters.

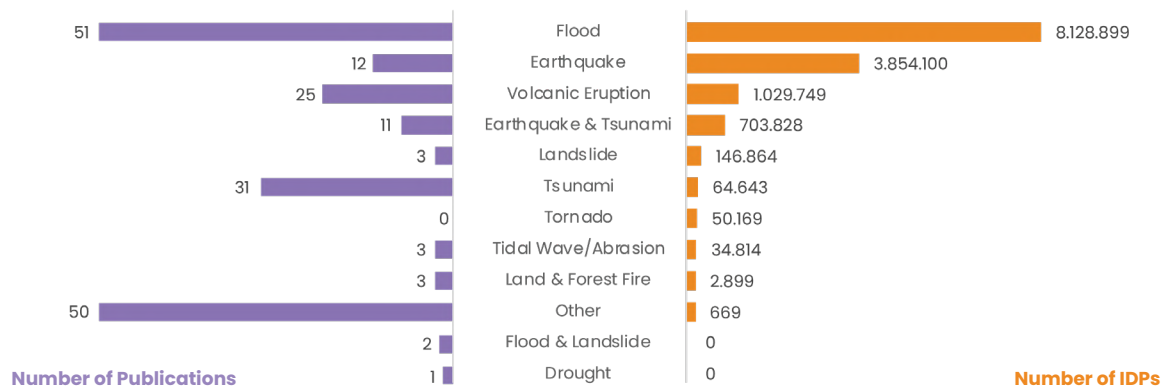


Figure 51. Number of research literature vs. the number of IDPs of each hazard type (n=192)

Based on data from the Indonesian National Disaster Management Authority, floods, earthquakes, and volcanic eruptions are the three hazards that have caused the highest number of IDPs in the last 20 years (2002–2022). The number of IDPs can be used as a benchmark for the impact of climate-related disasters (Figure 51). Flooding is the most studied disaster in regard to internal displacement, with 51 publications. Meanwhile, landslides and tornadoes should receive more attention, since despite the displacement they cause, they are extremely under-studied.

We also scrutinized the dataset of research publications from the IDKU to look specifically for references to climate change impacts (Figure 52). From the 26 sources that addressed climate change impacts, eight of them studied the

general impacts of climate change and six of them focused on climate change adaptation without specifying a project or implementation strategy. Sea level rise is referenced in four pieces, and rising temperatures and coastal flooding were addressed in two sources each. Other impacts studied included health, food security, and social conflict influenced by climate change.

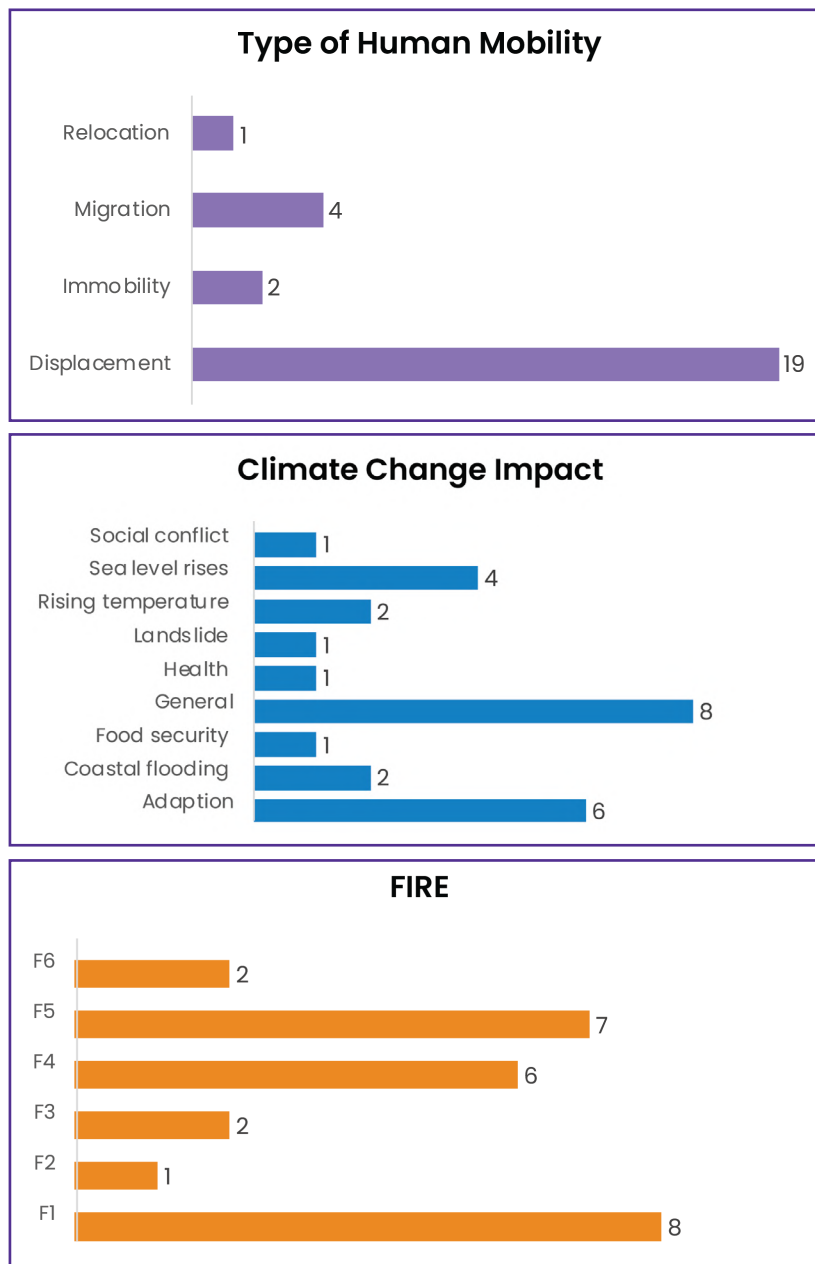


Figure 52. Number of literatures of Indonesia based on FIRE dimensions (n=26)



Forced displacement is the most studied topic, present in 19 studies, while other types of human mobility are not yet extensively researched. Four studies touched on human migration, two on human immobility, and just one on relocation. In terms of relevance to the FIRE framework categories, the literature mostly focused on fundamental rights and equality (F1), agency and empowerment (F5), and governance systems and structures (F4). Research on the other aspects, such as non-discrimination (F2), participation and access to information (F3), and social norms and context (F6), is still limited.

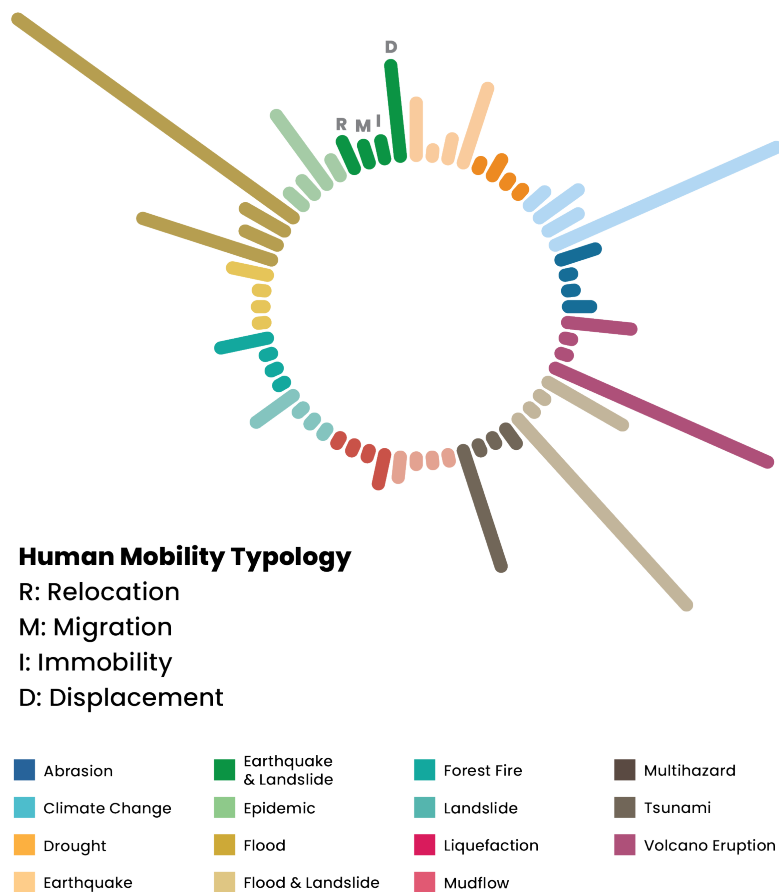


Figure 53. Number of literature breakdown based on human mobility typology and hazard type (n=192)

Figure 53 shows the data disaggregated based on the type of mobility for each hazard. Each colour represents a different type of hazard, while left to right, the four bars in each colour group represent instances of relocation, migration, immobility, and displacement. For almost every hazard, displacement is the

most studied form of mobility. This shows that the primary concern when studying hazards like this is largely around the immediate forced displacement of individuals. Significantly, the findings show that flooding and climate change are most studied in the context of human mobility. Furthermore, displacement (based on records of IDPs) always scored highest, regardless of the hazard type, followed by relocation (Matthew et al., 2022; Warner et al., 2013). Such development is common, since after disasters, some IDPs could return to their original dwellings while others should relocate. This phenomenon has been studied by Muir et al. (2020) in the case of a volcanic eruption, Hutagalung et al. (2020) in the case of the Sunda-strait tsunami, and Jayantara et al. (2020) in the case of a flood disaster in Citarum Watershed where some dwellers agreed to evacuate for temporary shelter and some agreed to relocate permanently. Meanwhile, migration is the least studied. Along with the many studies on displacement, research on migration needs to be improved so that in the future there are more adaptive and positive human mobility pathways available so people can move voluntarily and pre-emptively, rather than being forced to move in response to hazards.

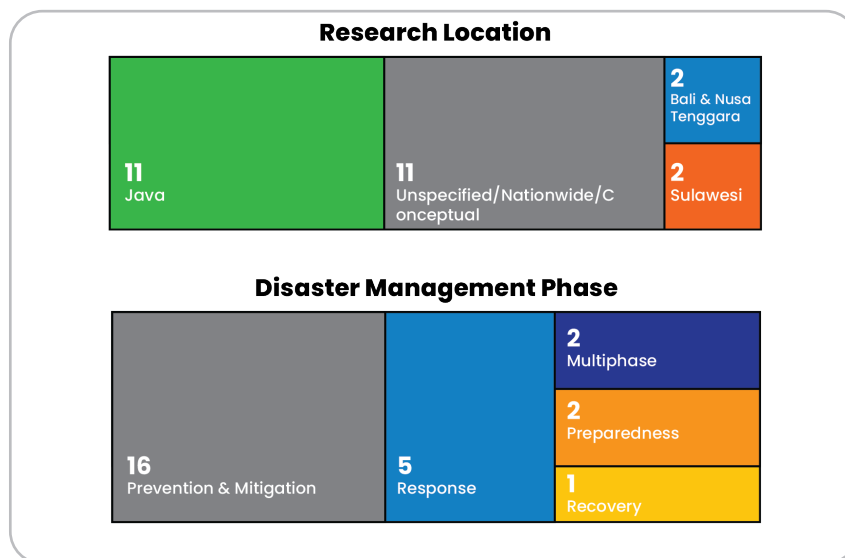


Figure 54. Climate change impact literature research location in Indonesia and its disaster management phase (n=26)

In Indonesia, research heavily focused specifically on Java island, and more broadly on nationwide or conceptual studies as can be seen above. Bali, Nusa Tenggara, and Sulawesi were less frequently studied, whilst other locations such as Sumatera, Kalimantan, Papua, and Maluku are yet to be researched according to our data. With regard to the disaster management phase, most papers discussed the linkages between human rights in the sphere of prevention and mitigation.

## 4.4 Drivers of climate change, mitigation action, human mobility, and human rights research pattern, trends, and gaps

There is strong evidence that climate change has caused an increase in extreme weather events, such as heavy rainfall, heat waves, droughts, and tropical cyclones. The 6<sup>th</sup> IPCC assessment report on the scientific basis of climate change identified that anthropogenic GHG emissions resulting from massive economic and development activities are causing climate change (IPCC, 2021). There is a strong degree of certainty that human activities are the cause of this (Hashim & Hashim, 2016; Jentsch & Beierkuhnlein, 2008; Stott et al., 2016). The exponential development, population, and economic growth over recent decades have all contributed to continual increases in CO<sub>2</sub> and other GHG emissions into the atmosphere (Zhang & Cheng, 2009; Zhu & Peng, 2012). The rising concentration of GHG in the atmosphere is causing a greenhouse effect, increasing global temperatures and destabilizing the global climate. These activities include the burning of fossil fuels, deforestation, land use changes, livestock production, fertilization, waste management, and industrial processes.

Countries and development actors are trying to bring new concepts related to low-carbon development to fruition, including climate change mitigation or GHG reduction efforts (Urban & Nordensvärd, 2013). Climate change mitigation refers to efforts to reduce or prevent emissions of GHGs (UNFCCC, n.d.). There are plenty of climate change mitigation strategies such as reforestation through REDD or REDD+, switching to renewable energy as an energy source, forest and wetland conservation, and circular economies. However, some of these climate change mitigation actions may negatively affect peoples' enjoyment of human rights and even force people to leave them (Ghazali et al., 2018).

To examine the prospect of this occurring, we obtained 66 research articles related to climate change mitigation action, human rights, and human mobility in the Asia Pacific from Web of Science, Google Scholar, and CARI! Knowledge Engine sourced from Scopus and DOAJ. During the process of selecting these publications, we used keywords for climate change mitigation activities (e.g., hydropower, solar farm, REDD+, etc.) and keywords for human mobility (e.g., resettlement, land grabbing, green grabbing, etc.). The number of articles shows an increasing trend over the last two decades, shown by the orange dashed line (Figure 55). A significant increase occurred in 2015 and, although there was a decrease in 2019, the positive upward trend continued through 2022, when 15 articles were published. This positive trend may have been influenced by the Paris Agreement in 2015 which emphasized the issue of climate change, especially climate change mitigation and adaptation. In addition, discussions related to the issue of climate change mitigation have been widely discussed in the last decade.

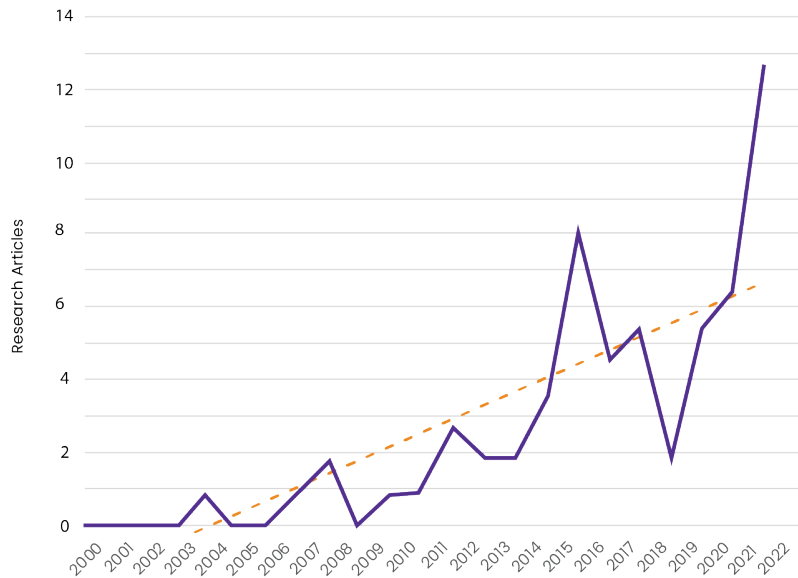


Figure 55. Annual record of research articles related to CCM, HR, and HM (n=66)

Figure 56 reveals that 25 of these articles focused on areas within the SEA sub-region. This was followed by SSWA with 17 articles, and ENEA with 14 articles. The sub-regions with the least number of publications are the Pacific and NCA, with four and one article respectively. The distribution of research articles in the context of climate change mitigation, human rights, and human mobility are similar to the distribution of the collected research articles.

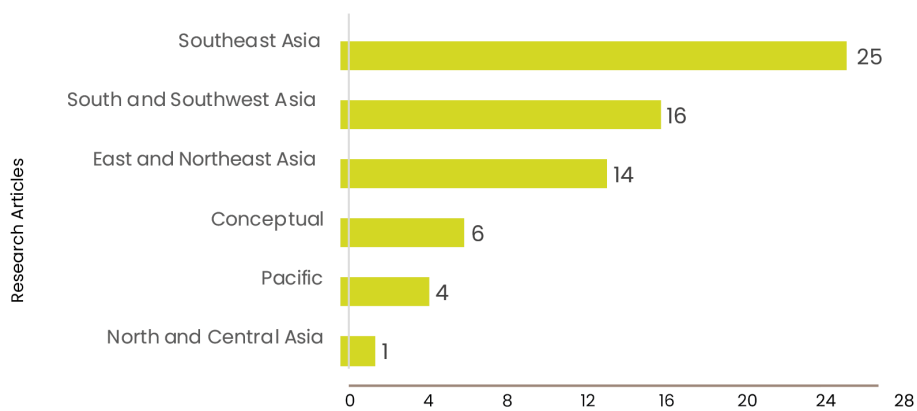


Figure 56. Number of research articles related to CCM, HR, and HM by sub-region (n=66)





Land claims, land grabs, land acquisitions, and green grabbing were also identified in the research articles; these keywords are strongly linked with issues of human rights and displacement (Gururani & Vandergeest, 2014; Scheidel & Work, 2018). Other keywords related to renewable energy are solar and geothermal energy, even though their size is relatively minor (Deshmukh et al., 2021; Gasparatos et al., 2017; Kramarz et al., 2021; Oniemola, 2022). However, with the recent interest in expanding renewable energy sectors as climate mitigation efforts, research on this topic may also increase including its relation to displacement and human rights. One example of how supply chains associated with projects like this can be linked with displacement and human rights violations in the case of nickel mining in Sulawesi, Indonesia (Camba, 2021; Rusdianto, 2022).

We used four research articles as case studies to identify the relationship between climate change mitigation efforts and their potential impact on human rights and human mobility. In addition to using research articles as literature review material, we also used online news articles, and several documents related to each case study as data triangulation. The initial findings show that large-scale climate change mitigation efforts, such as reforestation and renewable energy development, may have an impact on the enjoyment of human rights for local communities. Impacts include loss of livelihoods, reduced access to land, and an increase in human mobility.

**Case study 1.** Cambodia's large-scale reforestation project was a bilateral agreement on forestry cooperation between Cambodia's Forest Administration and the Korean Forestry Service. This is part of a memorandum of understanding signed in 2009 concerning "the cooperation on investment in forest plantations and climate change mitigation." Although Cambodia's Nationally Determined Contribution (NDC) report to the UNFCCC states that reforestation activities are part of REDD+ mitigation actions, there are no documents/articles that mention the specific target for reducing carbon emissions from this reforestation project. Thus far it is unclear whether this initiative would genuinely contribute to Cambodia's NDC target. Scheidel & Work (2018) found the reforestation project would affect around 1,900 families, 5,970 ha of community forests, 4,412 ha of rice fields, 3,534 ha of plantation land, and 10 ha of sacred forests and burial grounds. Therefore, leading local communities and households to move to seek other livelihoods. The article also reveals that when the company conducted the impact assessment, the impacted communities could not ascertain the regulation document brought by the company. This indicates that the communities had no prior knowledge of the reforestation and there was little-to-no prior, informed consent. In addition, the community sent a petition to the government to end the restoration project, however, this was rejected (Seangly & Turton, 2017). These findings highlight how large-scale reforestation projects, when carried out

improperly, can lead to significant human rights violations. Looking at the FIRE framework, the categories that could be affected by situations like this include: fundamental rights and equality (F1); participation and access to information (F3); and governance systems and structure (F4).

**Case study 2.** India has created a National Solar Mission to generate 20 GW of grid-connected solar photovoltaic energy by 2022. This scheme was initiated under the National Action Plan on Climate Change. Located in Chanaraka village, Gujarat, India, the solar park project itself has set a target to reduce carbon emissions from energy production to 139 million tonnes by 2030, by raising its installed capacity. The solar park project may help India to achieve its renewable energy and carbon emission reduction targets, but it has some potential impacts that need to be addressed, particularly around social justice and human rights. Yenneti & Day (2015) found the community affected by the project were not consulted and did not know about the project until land acquisitions were occurring. Furthermore, without proper information regarding the project, the marginalized communities living near and around the project were left with few options and at increased risk of displacement and rights violations due to the localised environmental degradation caused by the project. These findings indicate that large-scale projects like this can lead to violations of human rights, especially in the categories of fundamental rights and equality (F1) and participation and access to information (F3). This is especially the case if projects are carried out without proper consideration for the rights of residents and the responsibility of state actors.

**Case study 3.** The race towards renewable energy as part of CCM actions does increase the need for various explorations, including the material extractions required for alternative energy projects, such as lithium and uranium (Kramarz et al., 2021). While Australia is one of the main producers of the world's lithium, there is no research studying the impact of the renewable energy-linked mineral boom on human displacement and human rights in Australia (Agusdinata et al., 2018). There are recent reports that Australia's booming lithium sector is set to match and surpass thermal coal in export value within the next five years (Ferryhough, 2023). However, this particular study does not focus on human mobility, but rather the lack of research on the potential socio-environmental issues that the renewable energy boom in Australia may cause. Arguably, Australia is less likely to face social issues caused by mining-related displacement, unlike in South American countries. In the "lithium triangle" of South America, the size of land area and the location of mineral deposits make it more likely that mining operations come into conflict with communities (Kramarz et al., 2021). Meanwhile in Australia, mining operations potentially caused conflict when it compromised the rights of Indigenous groups. There is prior research that details these threats

to Indigenous peoples' rights due to uranium exploration and mining, which likely have analogous findings (Graetz, 2015; Sovacool, 2021).

**Case study 4.** The fourth case looks at hydropower-induced displacement and resettlement in the Lao PDR. The Lao PDR government has focused on hydropower development as a driver of economic growth since the 1990s. In 2011, there were 10 hydropower dams in operation, nine under construction, 17 in the planning stage, and 44 in the feasibility analysis stage (Delang & Toro, 2011). These numbers surged to 818 hydropower projects in 2021, with a total potential capacity of 23,182 (Ty et al., 2023). Alongside domestic uses, electricity produced by the hydropower dams is exported to surrounding countries like Thailand, China, and Viet Nam. However, the construction of hydropower dams often results in displacement for local communities. Delang & Toro (2011) studied the consequences of the construction of two hydropower dam projects, the Bolaven Plateau project and the Xe Katam hydropower project, which both forced local communities to move and resettle elsewhere. The study found several human rights issues in the development and implementation of the two projects. Firstly, there was misinformation and uncertainty surrounding the relocation plan, including when it would take place and what compensation would be given. Second, the lack of suitable farmland in the resettlement location meant the local community lost access to their old livelihoods. Some members of the community even attempted to return to work on the old farmland to remedy this. Thirdly, project planning documents failed to carry out adequate planning processes, such as an environmental social impact assessment for the local community, which could have helped prevent these rights violations. These findings indicate that the hydropower dam projects in Lao PDR led to violations of human rights in the categories of fundamental rights and equality (F1) and participation and access to information (F3).

The case study 4 also resonates with a research on a similar case by Xu et al. (2020) and their research on the Rogun hydropower plant in Tajikistan. The study argues that Rogun's current financial viability, involuntary resettlement, measures to prevent corruption, and information disclosure were seriously deficient. They propose that external factors, such as the Belt and Road Initiative, improving the business environment, and easing geopolitical disputes, can eliminate weaknesses and improve its sustainability performance.

## 4.5 Intersectionality: gender and social inclusions

UNHCR (2018) has reported that since 2010, around 21 million people annually have been forced to move due to climate change. Although slow-onset

climate-related hazards, such as water scarcity, drought, permafrost retreat, sea-level rise, and loss of biodiversity will affect all members of society, their impact will be disproportionately felt by women and other marginalized members of the community, including the elderly, the disabled, and children. Research has found that women and girls are more vulnerable and more exposed to various forms of violence during crises, including those triggered by climate-related hazards. Women and girls are particularly at risk of experiencing sexual and gender-based violence when seeking temporary shelter while evacuating or fleeing from climate-related hazards (Horton, 2012; Rojas-Cheatham et al., 2010). A report from Bihar in India found that there was an increase in domestic violence against women, human trafficking, and abuse in relief camps, as well as a higher preference for male children after floods (Bhadra, 2022). As shown following the Great East Japan earthquake of 2011, gendered discrimination in evacuation centres is not limited simply to violence either. Women in displacement centres were tasked with preparing meals, which they did without being paid. This was not the case for male evacuees who were not expected to contribute to this task and instead had the option of collecting and removing rubbish, for which they received compensation (Saito, 2014).

Another dimension of gendered impacts occurs when resource-constrained families are forced to marry off their daughters at increasingly young ages. As Ensor (2013) argues,

“ This has been explained as a survival strategy to obtain cattle – vital among pastoralist groups – money, and other assets via the traditional practice of transferring wealth through the payment of dowries, in the absence of other viable alternatives. ”

In particular, South Asia is one of the most climate-vulnerable regions in the world where nearly 29 million people have been internally displaced due to weather-related disasters in the last five years. Amidst this background, the gendered impact is widely visible. In Bangladesh, reported increases in child marriages were found in coastal communities and areas near Sundarbans in West Bengal, India during flooding events. The same patterns were observed during the COVID-19 pandemic in areas facing rising sea levels and prone to cyclones (Asadullah et al., 2021).

Lesbian, Gay, Bisexual, Transgender, Queer, and/or Questioning (LGBTQ+) communities too, are faced with increased discrimination when displaced due to climate-related hazards. This is due to reasons such as greater discrimination, violence, exclusion, sexual and gender-based violence, and homelessness. For example, differential treatment for LGBTQ+ persons was observed during relief and

recovery efforts in the aftermath of the 2008 earthquake in Haiti (Goldsmith et al., 2022). During the Indian Ocean Tsunami in 2004, the missing and dead persons of the Aravani community in Tamil Nadu in India, who are either born intersex or male and generally do not consider themselves as being either man or woman, were not even recorded in the official data (Pincha, 2008).

In Sri Lanka, several studies have indicated that women are both more exposed to the impacts of climate change, but also have a greater potential for climate adaptation actions that are currently underappreciated and untapped by formal development processes (Dominelli, 2013; Tsuchida & Takeda, 2021). Traditionally, male farmers do not allow female family members to enter and support activities in the paddy field, as it is believed it is a bad omen and could trigger droughts (Jost et al., 2016). However, research has found that during drought, women are more active than men in agricultural activities, and in some cultural events related to harvesting, older women take the main role (Tsuchida & Takeda, 2021). Women also adapt by cultivating home gardens to sell produce in local markets. This practice provides them with income and empowers them by establishing stronger livelihoods. Despite this, in most Sri Lankan villages, men are the political decision-makers in official hierarchies, and women are restricted to informal spheres.

Women in other sub-regions, such as Southeast Asia, also experience changes in livelihoods from climate-related events. In Viet Nam, rice land area has decreased from 4.47 million ha in 2000 to 4.12 ha in 2018, or equivalent to nearly 20,000 ha of rice land lost annually (Tuan, 2021). While there are some positive development, due to deliberate land use changes to replace lost land, climate-related events like extended droughts and recurrent floods disproportionately affect those with more vulnerable livelihood activities. In this context, in the return-to-job efforts, males are prioritized more than female community members (Tuan, 2021, p. 24).

Another example of the gendered effects of climate change and human mobility is seen in the resettlement of a community due to a hydropower dam project in Viet Nam (Singer et al., 2014). On one hand, the internationally funded climate mitigation project aimed to promote a gender-based approach by designing women-centred activities around capacity building. On the other hand, this clashed with the traditional priorities of the community. Wives in the community faced resistance from their husbands who discouraged them from attending the meetings and disagreed that women should be part of the process. This highlights the tensions that can arise between efforts to include gender perspectives as part of a human rights-based approach around climate issues and existing local cultures and norms.



The background image is a desolate landscape showing the remains of buildings and bare trees partially submerged in water. The sky is filled with heavy, grey clouds, creating a gloomy and somber atmosphere. The entire scene is overlaid with a semi-transparent purple color.

# 5. Conclusions and recommendations

Photo: Landscape of building ruins and bare trees in the water under a cloudy sky on a gloomy day

Freepik | wirestock

## 5.1 Conclusions

This report had an initial working hypothesis that the majority of the literature would discuss the chain of causality beginning with the (actual or perceived) climate change impact from both rapid and slow-onset disasters, through its effects and impact, onto the decision to take any form of human mobility – either forced or voluntarily – and ultimately whether the rights of those exposed to this climate-related event are respected, protected, and fulfilled. We found that **most research from the dataset focused on the relationship between human mobility and climate change mitigation.** Moreover, **research is needed on intersectional and gendered approaches to understanding, monitoring, and planning for climate and disaster-related displacement.** In particular, we to better understand how mobility behaviours and effects vary among gender and household type. However, it should be noted that there is a growing tendency of expanding the research focus within the context of not only climate change impacts but also climate change mitigation and adaptation. Furthermore:

1. Most research on climate-related displacement adopts a **risk-centric perspective**, meaning **human mobility is perceived as (mainly) a response to the risks** posed by climate change and related hazards and disasters. A risk-centric perspective puts **more attention on the place of origin and its push factors** (e.g., casualties or actual/perceived loss), **instead of a people-centred view** (i.e., about the movement itself, destination, or reasons for immobility). Consequently, it tends to **simplify human mobility as an adaptation strategy** to diversify livelihood and enhance resilience. There is a **tendency to overlook the multifaceted factors and characteristics of mobility which may influence decisions to migrate**, such as mobility patterns, duration, types, destinations, and gendered impacts. Interdisciplinary research on these issues may provide better insights into how these factors shape experiences of mobility and rights in the context of climate change.
2. Nevertheless, **current research on this theme has identified the potential for an expansion of a people-centric perspective.** For example, Atapattu (2020) notes that “there are signs that climate negotiators seem finally to have woken up to the reality of climate displacement” and concludes that there is a need to intensify the planning process, which requires input from researchers to provide alternative strategies. Mosneaga (2022b) also notes that “a closer look at national policies and operational approaches reveals that this more nuanced understanding of disasters and displacement is lacking in practice.”
3. Globally, **the interwoven relationship between international instruments such as the UNFCCC and the Nansen Initiative highlights the importance of addressing human mobility, particularly around issues of human**

**rights and cross-border climate-related displacement.** The Paris Agreement provides for the negative impacts of this type of human mobility to be addressed under the umbrella of adaptation, as exhibited by the establishment of TFD, while the Nansen Initiative focuses on a broader spectrum, from preparedness, prevention, protection during movements, and durable solutions in the aftermath. This showcases the need for both mitigation and adaptation strategies to be utilised when developing responses to and plans for cross-border climate-related displacement and mobility. The relationship between the Paris Agreement and the Nansen Initiative can also be strengthened, particularly around monitoring processes. In this respect, **there is a gap in translating and implementing the global governance aspect of this nexus for the Asia Pacific context, specifically from bottom-up perspectives**, as indicated in Section 3.1 and 4.1.

4. The study found that **knowledge entrepreneurs at the nexus of climate change, human mobility, and human rights in Asia and the Pacific are almost evenly distributed between institutions based in Asia and the Pacific and those from outside the region.** Further reading reveals that many of these institutions are based in countries with more established knowledge creation environments, such as Australia, Japan, and the United States, while localized research from within the sub-region of the research locus is still not proportionately represented. The lack of local research risks the absence of local experience and knowledge, resulting in an incomplete understanding of certain situations. However, this also raises the question of whether facilitating more local experience by supporting local knowledge creation may automatically lead to better research outcomes. Further research on this theme may provide more insights into the issue.
5. **The number of research articles on the issues of climate change mitigation, human rights, and human mobility in Asia Pacific has increased over the last two decades.** A significant increase occurred from 2015 onward, and although there was a decrease in 2019, the positive upward trend continued to a peak in 2022 with 15 publications. This positive trend is likely to be closely connected with the development of the Paris Agreement in 2015. In addition, discourse around climate change mitigation has been prominently and widely discussed over the last decade. It should be noted that for 2023, the data used only January at the time this report was prepared. Moreover, academics, researchers, and stakeholders need to encourage a more balanced understanding of human mobility in the face of both rapid and slow-onset disasters in relation to climate change and human rights, including in how data is collected and recorded.
6. **Robust evidence and research publications framed with FIRE elements have the potential to inform policymakers and stakeholders to translate**

**concepts into action. More structured in-country research using FIRE would be crucial within this decade** to systematically gauge the progress of human rights inclusions in the management of climate-related human mobility. It also resonated well with the participants of the APANDD Conference.

7. In order of priority, the APANDD Conference concluded that the following **grand hypothesis of climate change, human mobility, and human rights nexus should be addressed through future research**. Most participants see that the overlooked multifaceted factors behind any human mobility decision should be better studied. Meanwhile, proactive decisions to make human rights research the foremost issue around the nexus of climate change, human mobility, and human rights should naturally emerge if the other phenomena are well understood.

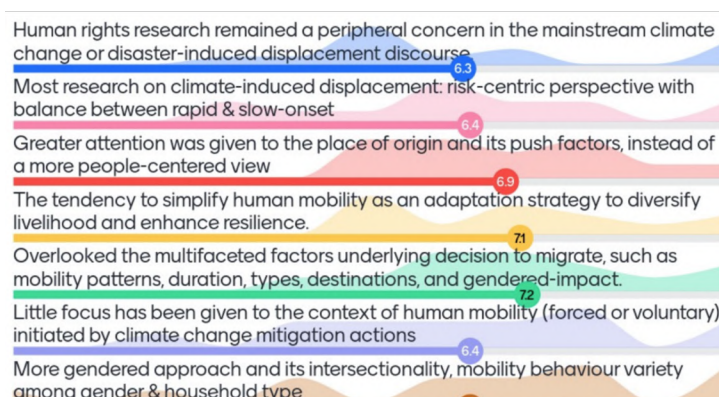


Figure 59. Most pressing issues to be addressed according to the APANDD Conference

8. The literature review and discussion with the APANDD Conference's participants indicated the following **factors limit the advancement of policy, practice, and research development around the nexus of climate change, human mobility, and human rights**. Across regions and countries, there is a lack of uptake within policy domains related to these key issues. Meanwhile there is less indication that a limited lack of opportunities within academic societies is a barrier to advancement here.



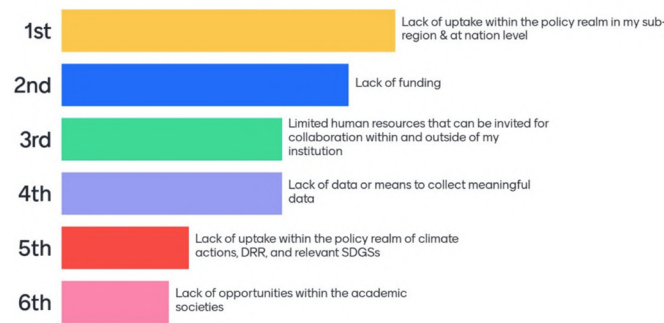


Figure 60. Factors that limit advancement of research on climate change, human mobility, and human rights nexus, according to the APANDD Conference

- The priority research areas of the APANDD include **more research programs and activities for the Pacific** with respect to all aspects of climate-related human mobility and its inter-relationships with human rights protection. Meanwhile, in Southeast Asia and South Asia, more targeted research on climate change mitigation, human mobility, and human rights nexus is required.

## 5.2 Recommendations

Following this literature review, researchers of the APANDD and RWI could increase more South-South multi-country research in areas of climate change, human mobility, human rights, and its intersectionality. One of the potential initial steps is to conduct **a comparative study** between two or more countries. Conducting a comparative study as the initial step to increase South-South collaborative research could provide insights into the strengths and weaknesses of each country’s situation, and potential strategies to address this. Further research opportunities could stem from the patterns and models identified in this initial study. This can also be done through a more **intensified research collaboration, joint proposal, and resource mobilization, as well as research publications**. The network’s members should also contextualize various research findings on climate change, human mobility, and human rights in each country and context.

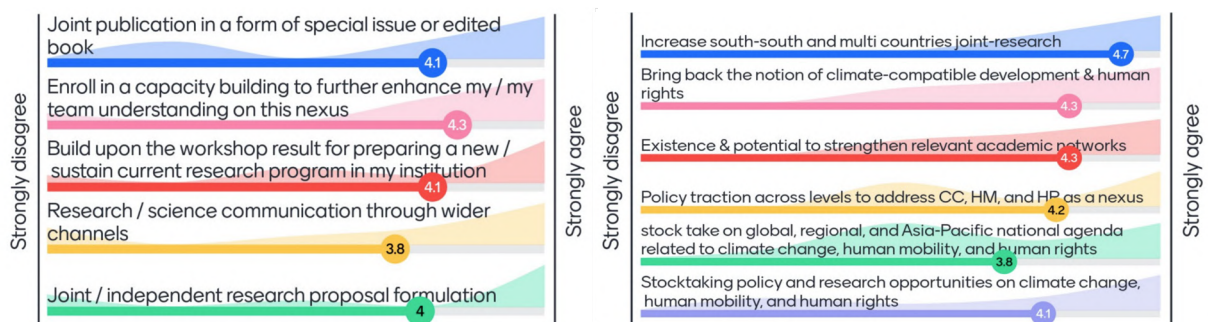


Figure 61. Recommendations from APANDD Conference



**Systematic research and research outreach steps through the APANDD network at international, regional, national, and local levels are crucial.** Another issue to have the potential to be addressed is the recent recognition of the right to a healthy environment by UNGA. Incorporating the newly acknowledged right into future research might offer more comprehensive views on the issue.

Another potential area that should be prioritized by researchers and APANDD members is to identify, study, and find leverage on **the utilization of indigenous knowledge** that could address and respect the diverse approach and realities of locally specific “rights” and “existence” that are rooted in the traditions of each local context. Better recognition of internal human movement within countries is also crucial. Exploring these avenues may also contribute to, and borrow from, the growing literature on nature-based solutions in the context of climate change adaptation, which have the potential to strengthen the position of local knowledge in holistically addressing climate change.

**Initiate and promote FIRE application in a CCM context.** The APANDD members could also independently or collaboratively pioneer research that applies FIRE to understand the extent of challenges to human rights in the context of climate change and human mobility. This could also be used to prescribe policies and programs aimed at addressing these challenges and ensuring human rights are protected during all forms of climate-related human mobility. Applying the FIRE could help mitigate any “greenwashing” efforts and work to ensure that communities affected or displaced by CCM-related programs have their rights protected.

**Pioneer a strategic research collaboration using FIRE-based analysis to generate empirical study across levels.** The RWI and APANDD have the potential to promote and use FIRE more systematically at both global and local levels.

1. **At the global level**, the FIRE has the potential to guide the development of case catalogues or datasets on the inclusion and protection of rights and equality. The datasets at a country level can be combined with the more-mature tracking of internal displacement under the custody of the IDMC. This has the potential of becoming a trustworthy tool for monitoring and evaluation of rights and equality inclusion across various types of mobility.
2. **At the local level and in the context of planned relocations**, the RWI and/or APANDD could strategically collaborate with the convener of the Platform on Disaster Displacement and employ a FIRE-based analysis to more deeply understand each instance of planned relocations. A robust empirical study of each relocation can be harvested and turned into a more practical set of guidance and technical standards to ensure the protection of rights and equality in all future planned relocations across countries in Asia and the Pacific.

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## **Appendix – Literature Review CCHMHR Publication Datasets**

For the complete publication datasets used in the literature review process in this report, please send your request to [info@rwi.or.id](mailto:info@rwi.or.id).

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