Refugees International

Adapting to Climate Change During Displacement:
The Role of Livelihood Opportunities and Labor Market Access

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Executive Summary

This report explores how livelihood opportunities and access to labor markets affect the ability of forcibly displaced populations—refugees and internally displaced people (IDPs)—to adapt to the impacts of climate change. Previous studies have shown that displaced populations are among the most vulnerable to climate hazards, often residing in fragile environments with limited resources, especially in low- and middle-income countries (LMICs).

Using a systematic scoping review of 25 peer-reviewed articles, the report finds that sustainable livelihoods play a critical role in enhancing climate resilience. Interventions such as cash transfers, training programs, and regularization policies can help displaced populations build assets and improve their welfare. However, challenges remain, including restricted legal rights for refugees, weak institutional support, and environmental degradation caused or worsened by poorly managed displacement. In various contexts, displaced populations face legal, economic, and social barriers that prevent them from earning income, decreasing their abilities to cope with sudden and slow-onset climate events.

The report presents three key findings. First, **livelihood access is central to climate adaptation**. Displaced populations with access to stable and diverse income sources are better able to respond to climate-related hazards. Programs like cash transfers, vocational training, and business support can increase both short-term welfare and long-term resilience, especially when they include climate-relevant components such as drought-resistant agriculture or disaster preparedness. Second, **institutional support and policy frameworks matter**. Legal barriers and weak governance often prevent refugees from accessing formal labor markets, while IDPs may lack infrastructure and services. Policies that enable economic participation—such as regularization programs or inclusive development planning—are crucial for ensuring that livelihood interventions are effective and sustainable. Third, **short-term relief must be linked with long-term strategies.** Many interventions focus on meeting immediate needs, but this is not enough. Successful approaches integrate short-term assistance (like shelter, food, and cash) with long-term livelihood development, skills training, and environmental protection. This combination helps break cycles of poverty and vulnerability. Lastly, governments and international donors need to prioritize the **development of climate-resilient infrastructure** that can complement the livelihood initiatives, improve safety, enhance mobility, and facilitate better access to markets and services for refugees and IDPs.

The report also emphasizes the importance of community-led strategies and traditional knowledge in building adaptive capacity. However, key gaps remain in the

evidence base. There is limited evidence on the long-term effects of livelihood interventions and their specific contribution to climate resilience. Few studies focus on the experiences of women, adolescents, people with disabilities, or host communities. Geographic coverage is uneven, with little research from Latin America, Small Island Developing States, or conflict-affected areas like Yemen or South Sudan. Additionally, more studies are needed to understand the role of traditional knowledge, policy environments, and the cost-effectiveness of different adaptation strategies.

Overall, the findings emphasize that supporting livelihoods is not only a matter of economic recovery—it is a foundation for climate resilience. Addressing these knowledge and policy gaps is essential to designing inclusive, sustainable, and context-sensitive adaptation efforts for displaced populations.

Introduction

Recent studies have shown that refugees and internally displaced people (IDPs) are amongst the most vulnerable to the impacts of climate change (Fransen et al., 2024a; Fransen et al., 2024b; Owen et al., 2023). These findings are unsurprising, as most displacement camps and settlements are located in the Global South (UNHCR, 2025), often in fragile settings experiencing prolonged conflicts, wars, political instability, and facing increasing environmental stresses. Refugees and IDPs are some of the poorest groups within the countries in the Global South (Admasu et al., 2021; Pape & Verme, 2023). Furthermore, these populations face multiple barriers in accessing livelihood generation opportunities and labor markets (Schuettler & Caron, 2020) that can not only help them escape poverty traps but also build their resilience to climatic events. This study specifically examines these linkages between livelihood generation, access to labor markets, and the adaptive capacities of displaced populations in the context of climate change.

Understanding these linkages is critical given the current global trends in forced displacement and climate change. The number of forcibly displaced populations has been increasing rapidly. By the end of 2024, more than 123 million individuals had been forcibly displaced, with 73.5 million internally displaced people and 36.8 million refugees (UNHCR, 2025). Moreover, low-and middle-income countries (LMICs) host more than two-thirds of the global refugee population (UNHCR, 2025). These countries are also highly vulnerable to climate change, with limited resources that constrain their ability to adapt effectively (Castells-Quintana et al., 2018; Sharpe & Davison, 2021). Studies show that refugee settlements in LMICs are often located in areas more exposed to climate hazards than other areas within the same countries (Fransen et al., 2024b; Owen et al., 2023). This indicates that climatic events pose significant risks to displaced populations in these countries, potentially decreasing their welfare, increasing their vulnerability to future climate hazards, and amplifying their likelihood of being trapped in poverty cycles (Fransen et al., 2024a). Therefore, identifying effective pathways to strengthen the adaptive capacities of displaced populations must be an urgent policy priority and an area of further academic research.

This study focuses on one such pathway to building resilience of displaced populations: livelihood generation and labor market access. The main question this study addresses is: how does access to livelihood opportunities influence the adaptive capacities of refugees and internally displaced populations in a changing climate? To understand the linkages, we conduct a systematic scoping review of the existing literature. Through this review, we synthesize current knowledge on the issue, identify key thematic areas, highlight gaps in the evidence, and finally, outline

the avenues for future research. To understand the role of livelihoods generations, we draw on the Sustainable Livelihoods Framework (SLF), which defines livelihoods as comprising of "the assets (natural, physical, human, financial and social capital), the activities, and the access to these (mediated by institutions and social relations) that together determine the living gained by the individual or household" (DfID, 1999; Ellis, 2000; Kuang et al., 2019). This framework highlights that access to the labor market and employment opportunities are primary mechanisms for generating livelihoods and resilience.

Livelihood Opportunities and Labor Market Access in Displacement Settings

Livelihood interventions have consistently been central to the UN Refugee Agency (UNHCR)'s efforts to boost self-reliance[1] and self-sufficiency amongst refugee populations (Crisp, 2003; Horst, 2006; Jacobsen & Fratzke, 2016). These interventions first gained importance in the 1960s and 1970s, as the aftermath of the large-scale refugee movements across Africa. During this time, the most common livelihood strategy involved establishing agricultural settlements on lands provided by host governments. The assumption was that these settlements would quickly become self-reliant and could eventually be taken over by local authorities. However, the approach proved largely unsuccessful, with some studies attributing the failure to the poor quality of the allotted agricultural lands (Crawford & Holloway, 2024), which hindered the potential for sustainable livelihoods. Consequently, few settlements became independent, and UNHCR continued to carry out the long-term assistance programs.

In the 1980s, this strategy was replaced by a new approach known as 'Refugee Aid and Development.' This model focused on raising funding from the international community to introduce development initiatives in the host countries that could benefit both the refugee and host populations. Crisp (2003) argues that while this approach was partly successful in promoting livelihoods, its progress was significantly marred by the massive famines in the Horn of Africa during these years, which shifted donor priorities toward emergency funding. The late 1990s and early 2000s witnessed the revival of UNHCR's interest in refugee livelihoods as incidences of protracted displacement rose and levels of aid to deal with it declined. As it became clear that minimum humanitarian standards could not be met through assistance programs alone, livelihood generation and the promotion of refugee self-reliance

[1] UNHCR (2005) defines self-reliance as the social and economic ability of an individual, a household or a community to meet essential needs (including protection, food, water, shelter, personal safety, health and education) in a sustainable manner and with dignity. Achieving self-reliance enables refugees to participate in the social and economic life of their host communities and contribute to rebuilding their countries should they be able to return (See Refugee Self-Reliance Initiative, 2021).

once again moved to the forefront of UNHCR's agenda (Crawford & Holloway, 2024; Crisp, 2003). Since then, the focus on livelihoods has continued to receive sustained attention from UNHCR, other international humanitarian agencies, and donors.

Broadly speaking, livelihood interventions for forcibly displaced populations follow three main approaches: policy-based, area-based, and individualized strategies (Crawford & Holloway, 2024). The case of Uganda presents one of the earliest and most prominent examples of a policy-based intervention that can be effective in boosting livelihood generation amongst refugee populations (Betts et al., 2019). With an extensive history of hosting refugees, Uganda began allocating agricultural settlement land to refugee populations as early as 1959 (Betts et al., 2019; Bohnet & Schmitz-Pranghe, 2019). The enactment of the 2006 Refugee Act in Uganda provided refugees the right to work and lifted restrictions on their mobility, and thereby, effectively enabled them to participate in the local labor markets. Studies have shown how these interventions have significantly enhanced access to employment and raised the incomes amongst refugee populations in Uganda (Betts et al., 2019; Nkiko & Ahimbisibwe, 2025). However, Betts et al. (2019) also discuss several limitations to this success. These include the declining size and quality of land allocated to refugees, growing scarcity of arable land for newly arrived groups, and barriers to accessing essential public services such as education due to long distances, language constraints, and high costs.

A more recent example of a similar intervention is the regularization program of Colombia, which allowed undocumented Venezuelan displaced migrants to access the formal labor markets. This led to significant increases in consumption and monthly labor income, as well as improvements in health outcomes among the Venezuelan refugees (Ibáñez et al., 2025).

Interventions can also adopt a narrower focus, camp-or area-based. These interventions focus on connecting the host and refugee communities and enhancing refugees' access to livelihood opportunities at the host labor markets. A recent joint initiative by the Kenyan government and UNHCR led to the inception of Kalobeyei settlement in Kenya (Betts et al., 2020). This settlement is specially designed to reduce aid dependency and foster self-reliance amongst refugees by allowing host populations and refugees to live side by side, and facilitating shared use of markets, schools, and hospitals. In comparing the self-reliance outcomes between Kalobeyei and the older Kakuma camps, which are located nearby, Betts et al. (2020) note better nutritional outcomes in Kalobeyei. However, they found no substantial differences in self-reliance enabling factors, such as environment, assets, networks, markets, and public goods. The authors argue that these enabling factors often depend on the actions of various actors, including local governments, businesses, host communities,

and refugees themselves, which cannot be altered by such interventions. Overall, their findings suggest that camp- or area-based approaches may be more effective when complemented with policy-based and individualized interventions.

Finally, interventions can take an individualized approach, for example, in the form of unconditional cash transfers, which, by helping meet basic consumption needs and reducing liquidity-related barriers, can facilitate labor market participation among forcibly displaced households. Caria et al. (2024) show that even small unconditional cash transfers significantly raised employment, wages, and earnings among Syrian refugee populations in Jordan after four months of intervention. Furthermore, a large one-off unconditional cash transfer to refugees in Kiryandongo settlements in Uganda was successful not only in increasing consumption but also in boosting investments in small businesses. The recipient households used the transfers to invest in starting small retail shops in market centers and within their homes (Gupta et al., 2024). Some of these interventions follow a cash-plus model, which combines cash transfers with complementary support programs. For instance, Caria et al. (2024) also provided informational and nudge interventions, which included helping refugee job seekers signal their skills to employers and motivating them in their job search. Although the effects were short-lived, both interventions were effective to some extent in improving refugee employment and earnings.

Individualized interventions can also be more holistic and follow a graduation approach (Sulaiman et al., 2016). This approach involves a sequence of multisectoral interventions, starting with consumption support, followed by skill training and provision of resources for self-employment, and concluding with coaching and mentoring to build confidence and sustain progress. These interventions last for 24-26 months, with the aim that, upon program completion, households will continue their upward economic trajectory. Blattman et al. (2016) provide positive evidence of such a program from Uganda, where a graduation program successfully improved the welfare of ultra-poor women in fragile and conflict-affected settings.

In general, several barriers may limit the success of refugee livelihood programs, including restrictive legal and policy environments, weak local labor markets, and stigmatization of displaced populations (Horst, 2006; Jacobsen & Fratzke, 2016). Additionally, funding for such programs is frequently short-term and inconsistent, while implementing organizations may lack the technical or business expertise needed, and limited involvement of host communities can create tensions and reduce overall program effectiveness (Jacobsen & Fratzke, 2016). Nisbet et al. (2022) conclude that global food security interventions for refugees operate in isolation from other essential services, such as health care, education, livelihoods, and shelter, which limits their effectiveness. Effective refugee livelihood programming, therefore,

requires a multi-dimensional approach—legal, economic, cultural, financial, and community-driven. Livelihood initiatives should be embedded in holistic frameworks that empower refugees, foster host-country buy-in, and build resilient local ecosystems (Jacobsen & Fratzke, 2016).

Livelihoods and Adaptive Capacities During Displacement

Following the Sustainable Livelihoods Framework, interventions that promote access to labor markets can also augment the accumulation of livelihood assets, such as physical, financial, human, and social capital. These assets, in turn, can be mobilized to better cope with climate hazards (Collishaw et al., 2023; Kuang et al., 2019). In fact, evidence from studies on non-displaced populations presents compelling support for this mechanism. For instance, Phadera et al. (2019) finds that an integrated assets transfer program, which included a one-time livestock transfer, training on livestock management and livelihood skills, and access to agricultural and veterinary services, was effective in increasing the resilience of participant households in Zambia. Similarly, Premand and Stoeffler (2022) report that cash transfers in Niger improved households' capacities to withstand droughts, as recipients invested the transfers in income-generating activities in non-agricultural sectors. To be successful, such interventions must be complemented by additional components, such as skills training and the development of climate-resilient infrastructure. Pakistan's National Poverty Graduation Programme was successful in increasing food consumption and accumulation of physical assets; however, its impact on increasing resilience to floods was limited due to the lack of flood-resilient infrastructure (Nawaz et al., 2025).

The challenges related to livelihood generation, accumulation and maintenance of assets could be greater for forcibly displaced populations, who often have distorted access to labor markets in host regions, high risks of exposure to political violence and persecution, and discrimination within host countries (Schuettler & Caron, 2020). Refugees, for example, often face displacement-specific vulnerabilities that are unique to their displacement, such as lack of access to human rights and legal status, as well as vulnerabilities that are not unique to their status but are intensified due to the situation they are in (Sabates-Wheeler, 2019). Displacement-intensified vulnerabilities may include, for example, poverty or low-paid employment. These additional challenges that displaced populations face make the design of effective interventions to enhance their livelihood generation and adaptive capacities highly complex.

While a recent body of literature has begun to explore the impacts of climate risks on displaced communities (see, for example, A. Ahmed et al. (2021), Ahmed et al. (2018),

Alam et al. (2020), Emberson et al. (2021), Few et al. (2021), Pollock et al. (2019)), the adaptive capacities of refugees and IDPs remain understudied, particularly through the lens of livelihoods and labor market access. Much of the existing research emphasizes the exposure and vulnerability of displaced populations to climate-related hazards (Fransen et al., 2024a; Owen et al., 2023), but fewer studies systematically assess how these populations build resilience through livelihood generation. Fransen et al. (2024b), for example, underscore that poverty and legal exclusion reduce adaptive capacity, yet also note a lack of conceptual clarity around terms such as 'sensitivity', 'vulnerability', and 'adaptive capacity' in the literature. This has led to fragmented assessments and policy recommendations that fail to address the complexity of displacement-affected livelihoods in climate-vulnerable settings. As a result, there is limited evidence on how access to labor markets, accumulation of livelihood assets, or tailored interventions can enhance the climate resilience of displaced populations.

We address this gap by conducting a systematic scoping review of the existing literature. Our populations of interest are refugee populations and internally displaced people (IDPs) residing in camps and settlements in low-and middle-income countries (LMICs). As previously noted, we focus on LMICs because they host more than two-thirds of the world's forcibly displaced populations and are amongst the most vulnerable to climate change events. These countries have limited resources, not only for climate change adaptation, but also in their administrative and governance capacities to systematically integrate refugee populations and provide them with access to sustainable livelihood opportunities (Nabatchi & AbouAssi, 2025; Newland & Riester, 2019). Finally, to ensure comprehensive coverage, we focus on studies examining the adaptive capacities of displaced populations in response to both fast-onset events (such as floods and heatwaves) and slow-onset events (such as temperature rises and prolonged droughts) of climate change.

Methodology

A systematic scoping review was conducted to examine the linkages between access to livelihood strategies by IDPs and refugees and their adaptive capacities regarding the adverse effects of climate change. Scoping reviews are especially useful for mapping the extent of available evidence for literature in disciplines that are currently developing (Peters et al., 2015). This contrasts with systematic reviews, which have become a common literature review methodology in social sciences but are rather based on narrowly defined research questions (Arksey & O'Malley, 2005; Peters et al., 2015). Scoping reviews allow for broader inquiry and are thus particularly suitable to

the context of our study, where theoretical and conceptual underpinnings are still developing and empirical evidence is limited. Moreover, by outlining the available evidence, a scoping review can help clarify key themes and identify gaps in the current knowledge base to suggest possible avenues for future research on the topic.

We followed the guidelines discussed by Peters et al. (2015) to design our review protocol. The first and foremost step in a scoping review is to clearly define the review objectives, which are guided by the overarching research questions outlined in the previous section. The review objectives are as follows:

i. Identify the key themes in how access to livelihood opportunities influence the welfare of the forcibly displaced populations.
ii. Highlight how climatic events and hazards affect these populations in host settings.
iii. Examine how access to livelihood opportunities contributes to the adaptive capacity of these populations.

The literature search was undertaken in May 2025 using Dimensions.ai. This is a comprehensive database of linked research data and has a broader data availability as compared to Web of Science and Scopus (García-Sánchez et al., 2019; Thelwall, 2018). The search was performed by executing queries following Domain Specific Language (DSL), which were developed based on the review objectives and inclusion criteria (detailed below), on Dimensions.ai. These queries included specific keywords identified based on the existing literature (Fransen et al., 2024a) and our review objectives.[2] These keywords are detailed in Appendix A.

We restricted our search to literature published in the English language. We also only considered peer-reviewed research articles. We note that while there is a substantial body of grey literature on this topic, it can be challenging to retrieve and analyse them systematically. Additionally, we excluded literature review articles to avoid duplication of evidence already captured in the original studies.

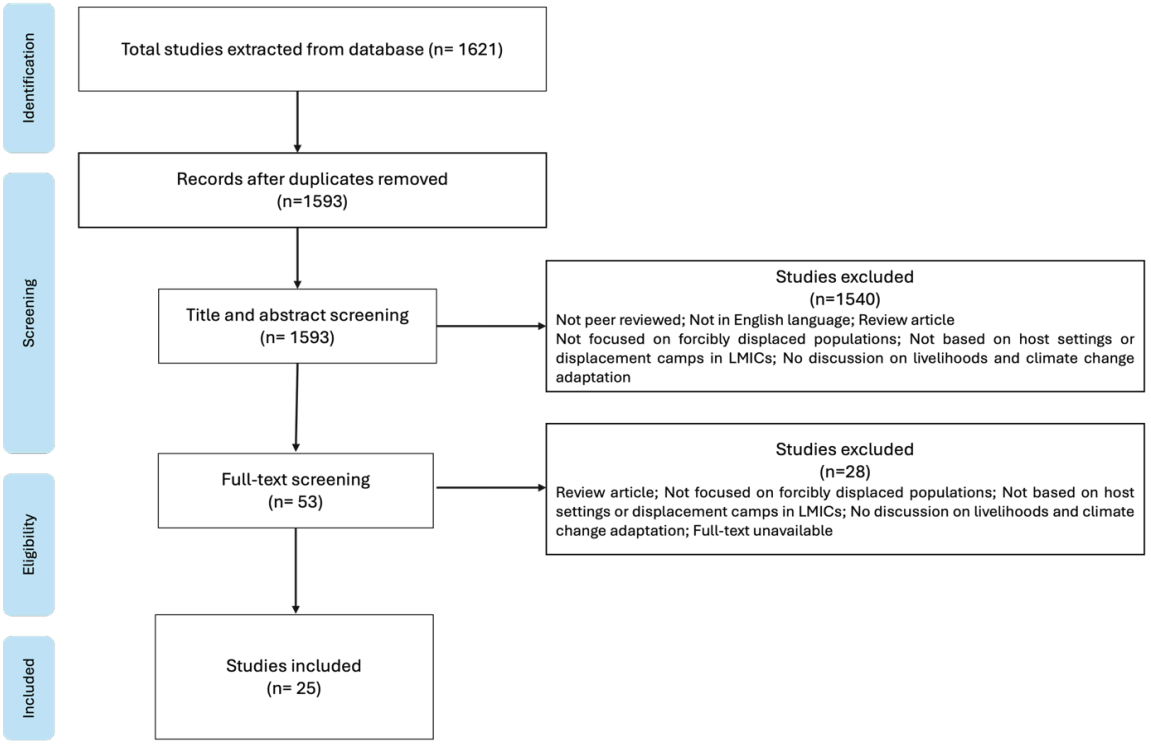
[2] The initial search also excluded monographs, conference proceedings, edited books, and book chapters. Additionally, we excluded studies from research disciplines not related to our review focus: engineering, earth science, atmospheric science, civil engineering, biomedical, biological, health sciences, and health science and systems. Articles with the term “COVID-19” in either the title or abstract were also excluded to avoid confounding effects.

Before conducting the search, we established a set of inclusion criteria to determine which articles would be considered in our scoping review. These criteria are as follows:

i. Studies that focus on refugees and IDPs as the main population of interest, either within host communities or in displacement camps.
ii. Studies that discuss host communities and displacement settings located in low-and middle-income countries (LMICs).
iii. Studies that explore adaptation to either slow-onset or fast-onset events of climate change or both.
iv. Studies that discuss, even if briefly, the linkages between access to livelihoods and the adaptive capacities of refugees and IDPs against climate risks.

The initial search yielded 1,621 articles. After removing duplicates, we then conducted a title and abstract screening, and then a full-text screening to build the final sample of the studies for the review. The title and abstract screening, as well as the full-text screening, were done by two reviewers, with regular cross-checks to reach consensus. At each stage of the identification and screening process, we documented the inclusion and exclusion decisions, along with the reasons. We illustrate these steps in the PRISMA flow diagram in Figure 1. The final sample for our review comprises 25 articles. These articles are listed in Appendix B.

Figure 1: PRISMA Flow Diagram

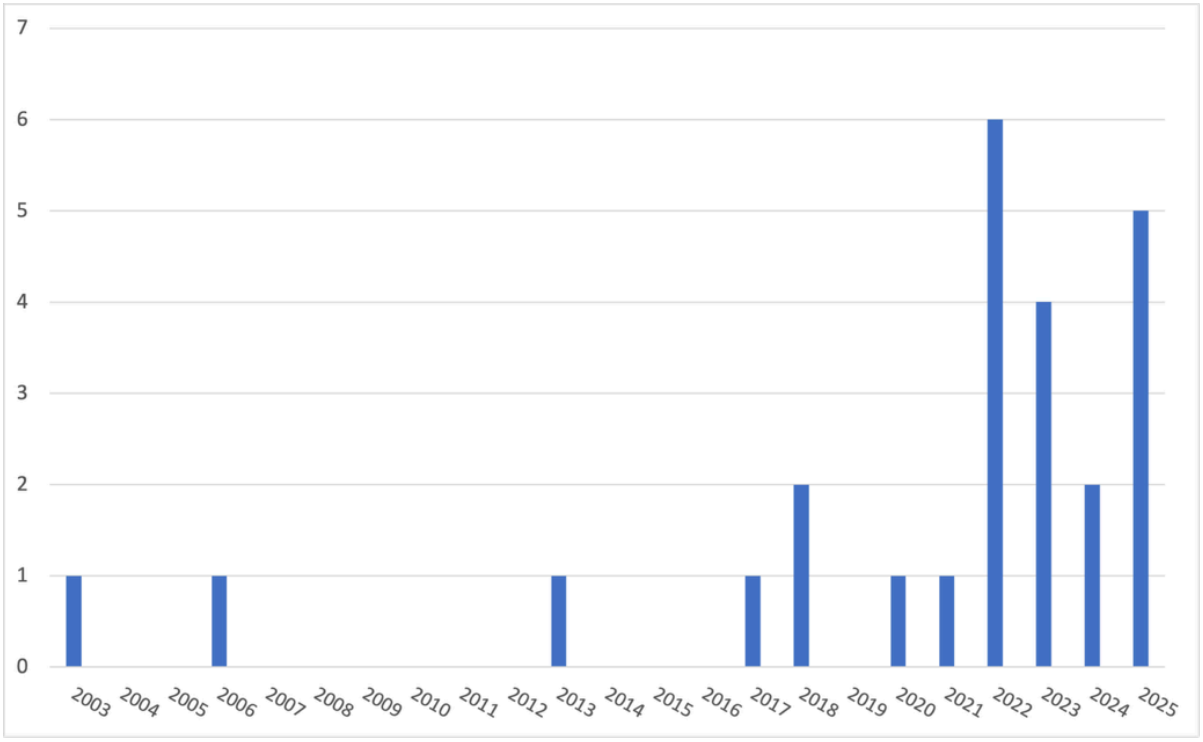


Findings

Descriptive Overview of the Final Sample

The selected articles were published across a range of years, as shown in Figure 2. The number of studies published in later years, especially since 2022, has risen considerably. This coincides with increasing numbers of populations who are forcibly displaced worldwide and also reflects a growing academic and policy interest in understanding the impacts of climate change and promoting access to sustainable livelihoods for forcibly displaced populations in a changing climate.

Figure 2: Years of Publication of Selected Articles



Note: The chart presents the number of studies in the final sample by publication year. The number of studies in the year 2025 is under-represented, as the search was undertaken in May 2025. (Source: Authors' own illustration)

The articles differ substantially in geographic scope, population focus, and methodology, and are scattered across academic disciplines. First, in terms of country focus, we observe that the most frequently studied country is Bangladesh (n = 7), followed by Uganda and Pakistan (n = 3 each). Other countries represented include Ethiopia, Nigeria, Chad, Sudan, Sri Lanka, Lebanon, Somalia, Kenya, and the

Philippines. One study included multiple countries (Kenya, United States, and Canada). We illustrate the distribution of the studies by country in Figure 3 below.

Second, the studies focused on different displaced populations. IDPs were the focus in 11 articles, refugees in 9 articles, and five articles addressed both groups. Three studies included host community populations. Overall, the population focus of the included studies is consistent with displacement patterns reported by international sources such as UNHCR and IDMC, indicating that the literature is attentive to the most affected groups in each context. In countries such as Bangladesh and Uganda, for example, the literature predominantly focuses on refugees, which reflects the substantial populations of Rohingya and South Sudanese refugees hosted in those settings, respectively. At the same time, studies on Bangladesh, Nigeria, and Pakistan also address IDPs, often in relation to climate-induced hazards such as river erosion, flooding, or drought. In countries like Ethiopia, Chad, Somalia, and Sudan, where both refugee and IDP populations are present, the literature varies in focus, sometimes due to data availability or to highlight specific case study sites.

Some gaps remain in coverage of IDPs in countries with significant internal displacement, which points to the need for more targeted research in those settings. For instance, the Democratic Republic of the Congo (DRC) and Colombia are among the countries with the largest IDP populations globally, yet they are not represented in the reviewed literature. Similarly, Yemen, Syria, and South Sudan, which all face prolonged conflict-driven displacement, are absent from the article selection.

Third, the 25 articles span a range of academic disciplines but are mainly concentrated in three areas: social sciences, environmental sciences, and public health. Many of the studies take interdisciplinary or multidisciplinary approaches. Among these, the social sciences are the most represented, particularly sociology, economics, political science, and related fields like refugee and humanitarian studies. The articles in our selection used a wide range of methods. Qualitative methods were used in 11 articles, mixed methods in 8, and quantitative methods in 5. One article used an observational approach, based on secondary sources.

Figure 3: Country Focus of Selected Articles

Note: The figure exhibits the distribution of studies in the final sample by countries. (Source: Authors' own illustration)

Livelihoods and Climate Events in Displacement Settings

In this section, we synthesize the findings of the systematic scoping review, starting with the livelihood challenges that the populations in our sample face and how climatic events relate to these livelihood challenges. Because of the limited body of literature on this topic, the analysis focuses on overarching trends rather than detailed comparisons across, for example, geographic or political contexts. Where possible, however, we highlight distinctions between the experiences of internally displaced persons (IDPs) and refugees.

Livelihood Opportunities and Welfare Outcomes

Our review highlights that refugees and IDPs face multiple, often interconnected, barriers to accessing sustainable livelihoods. One major barrier frequently cited across the studies is the lack of access to land, which significantly limits livelihood options for internally displaced populations. For instance, in Bangladesh's Char areas, repeated flooding and river erosion have led to increasing landlessness and forced displacement (Hossain et al., 2022). As a result, many displaced individuals are living in fragile housing conditions, with no access to agricultural lands, which has pushed them towards precarious forms of employment such as begging, household servants,

or casual day labor. These patterns are further supported by another study on Bangladesh, which finds that many people displaced due to riverbank erosion are forced to live on river embankments, often without access to safe drinking water, adequate food, and viable livelihood opportunities (Z. A. Kaiser, 2023).

Challenges related to land access are further amplified for refugees with no legal access to lands in host communities. These populations often reside in congested settlements with limited or no land available for farming (Geofrey & Tumwine, 2023; Zaman et al., 2020). Even in cases where land is allocated, such as under UNHCR's 'Self Reliance Strategy' for Sudanese refugees in Uganda, refugees have struggled to establish sustainable livelihoods. The lands allocated were too small and of poor quality to support meaningful agricultural activities. In addition, most refugees lack security of tenure, which makes their land access unstable. The influx of displaced populations is also often described as putting strain on local economies and infrastructure, creating competition for scarce resources. We find that disputes over land usage have led to frictions between refugees and host communities (Geofrey & Tumwine, 2023; T. Kaiser, 2006).

In fact, our review discloses that resource competition has emerged as a critical challenge across these already resource-scarce regions. In Uganda's settlement areas, the influx of refugees has led to significant environmental degradation, including deforestation and erosion, creating tensions with host communities over diminishing resources (Geofrey & Tumwine, 2023). Similar patterns appear in Bangladesh, where large-scale deforestation has created tensions between displaced and host communities (Mitu et al., 2022).

Refugees' unstable legal status also complicates their access to labor markets in host countries. We find strong evidence in our review that, across various contexts, refugees' pathways to sustainable livelihoods are highly complicated by their legal status in host countries, which imposes severe restrictions on their movement out of camp settlements and constrains their access to formal employment opportunities (Bezgrebelna et al., 2024; Devonald et al., 2022; T. Kaiser, 2006; Mitu et al., 2022; Zaman et al., 2020). Additional barriers, such as lengthy administrative procedures for obtaining work permits and language difficulties, further compound these challenges for refugee populations (Kinyanjui, 2025).

T. Kaiser (2006) notes that even when refugees manage to leave settlements, albeit illegally, to work, they are frequently at risk of exploitation, underpayment, or no payment, with no option of legal recourse. Devonald et al. (2022) similarly highlight the plight of adolescent Syrian refugees in Lebanon, who are commonly subjected to

low wages and are exploited by employers due to their limited rights and protections in the host labor markets.

IDPs, on the other hand, have their citizenship rights and technically can access formal employment opportunities, but can still face practical barriers in accessing them. In Bangladesh's Gaibandha region, forcibly displaced populations struggle to rebuild their lives, not because of legal restrictions, but due to the erosion of their physical, financial, and social capital (Hossain et al., 2022). Similarly, in Pakistan, flood-affected IDPs maintain their legal right to work, but their livelihoods are undermined by flood-induced damages, such as street stalls and marketplaces, that support informal trade (Shah et al., 2025).

Settlement patterns also vary highly between refugees and IDPs. In the studies included in our review, refugee populations are typically concentrated in designated camps or settlements with specific services (T. Kaiser, 2006). In contrast, IDPs tend to be more dispersed, with some living in temporary settlements, while others integrate into urban areas (Khan et al., 2025). This dispersion can offer IDPs more flexibility in seeking economic opportunities but may also limit their access to organized support systems. We find evidence of these differences in the types of support systems across the two groups. Refugees, particularly those in formal camps, usually have more structured access to international humanitarian assistance. In Kenya's Kakuma camp, for instance, refugees have benefited from the UNHCR programs designed to foster self-reliance (Kinyanjui, 2025). However, it is important to note that this structured assistance and reliance on humanitarian aid can result in problematic dependency cycles, especially when it is not accompanied by generation of stable income sources, as observed amongst Afghan refugees in Pakistan (Abbas et al., 2024).

In contrast, formal institutional support for IDPs is usually limited. Many of them rely heavily on informal community networks, forms of social capital, and draw on religious and cultural ties for support (Hutton & Haque, 2003; Khan et al., 2025; Samaraweera, 2018). We also note that in a few cases, IDPs have received assistance from local governments, as seen in Uganda's northern regions (Oryema, 2017).

Despite these differences, both refugees and IDPs face several common livelihood challenges. As we elaborate in the next subsection, climate vulnerability affects the livelihoods of both groups. Gender-based discrimination also cuts across displacement status, with women and girls facing particular barriers, including restrictive social norms, limited access to financial resources, and high risks of trafficking and exploitation (Abbas et al., 2024; Khan et al., 2025; Mitu et al., 2022; Zaman et al., 2020). Similarly, adolescents, youth, and people with disabilities are

especially vulnerable to exploitation, including child labor, regardless of displacement type (Abbas et al., 2024; Mitu et al., 2022).

Taken together, this review highlights how these challenges often trap both IDPs and refugees in cycles of poverty and increase their risk of falling into protracted displacement, where initial coping mechanisms become unsustainable over time. Furthermore, limited economic opportunities, combined with restricted mobility and aid dependency, make them particularly vulnerable to climate-related hazards and stresses, as we discuss in the next subsection.

Effects of Slow- and Rapid-onset Climate Events on IDPs and Refugees

The studies in our final sample highlight that climate-related hazards and events—such as floods, droughts, cyclones, riverbank erosion, and extreme heat—present pervasive threats in displacement settings. These hazards manifest in diverse ways across the different geographical contexts and create complex and compounding impacts on displaced communities.

In South Asia, displaced populations are especially exposed to climate-related hazards and events. Bangladesh's Cox's Bazar and Bhashan Char are some of the most climate-vulnerable regions in the world, where Rohingya refugees face multiple environmental threats, including landslides, tropical cyclones, riverbank erosion, and flash flooding. These are all exacerbated by overcrowded conditions and unstable hillside settlements (Z. A. Kaiser, 2023; Mitu et al., 2022; Zaman et al., 2020). Similarly, in Pakistan's Khyber Pakhtunkhwa region, Afghan refugees are experiencing recurring floods that not only damage infrastructure but also lead to repeated losses of crops and livestock, which pushes already vulnerable families into deeper poverty (Abbas et al., 2024). Besides, the effects of these climate hazards and events are also uneven across different sub-groups. Women and girls are disproportionately more affected, especially in settings where patriarchal structures and gender norms are deeply entrenched and limit their mobility, economic participation, and social lives. This has been evident amongst the displaced and refugee communities in South Asian countries (Khan et al., 2025; Mitu et al., 2022).

The Middle East presents its own set of environmental challenges. The articles on Lebanon report how many Syrian refugees live in poor housing conditions and struggle to cope with extreme temperature variations, from intense summer heat to harsh winters, as well as severe water scarcity issues (Devonald et al., 2022). These challenges are especially pronounced in informal settlements, where poor shelter

conditions and inadequate infrastructure amplify exposure to climate-induced disasters (Tiwari et al., 2023).

East Africa's displacement contexts reveal how climate pressures interact with existing vulnerabilities and exacerbate the situations. In Uganda, for example, refugee households regularly face food insecurity during drought years, as the lands allocated to them under UNHCR's Self-Sufficient Strategy were too small and of low quality to foster agricultural livelihoods and resilience (T. Kaiser, 2006). In Port Sudan, IDPs face extreme heat with minimal protection, lacking proper shelters and access to cold water on high-temperature days (Hassan & El-Hag, 2024).

In the Sahel regions of the African continent, such as in Chad, which is hosting a large number of refugees from Nigeria and Cameroon, exceptional temperature increases and shrinking of Lake Chad have led to the deterioration of natural resources. This has resulted in declining agricultural and livestock productivity, as well as substantial biodiversity losses. Consequently, both refugees and host communities are facing escalating levels of extreme food insecurity (Musa et al., 2022).

On top of this, displacement, when not properly managed, itself can reportedly accelerate environmental degradation and create negative feedback loops. In Cox's Bazar, the rapid establishment of refugee camps has led to excessive deforestation and hill cutting for shelter construction and firewood collection. These, in turn, have amplified the Rohingya refugees' exposure to landslides and flashfloods (S. Ahmed et al., 2021; Zaman et al., 2020). Similar observations are observed in Kenya and Uganda, where the influx of forcibly displaced populations increased pressure on land through rises in subsistence farming, demand for firewood, and building of shelters. This has led to widespread vegetation losses and deforestation (Geofrey & Tumwine, 2023; Mwaura et al., 2013). This environmental degradation further threatens the stability of settlements and the sustainability of local resources, creating a cycle of increasing vulnerability of displaced populations.

Finally, our review reveals a few key differences in how refugees and IDPs are experiencing climate vulnerability and environmental pressures. These differences are more tied to settlement patterns, aid support systems, and governance structures than to displacement status itself. For instance, in formal refugee camps, environmental challenges are often intensified by concentrated settlement patterns, limited space, and restrictions on movement (Mwaura et al., 2013; Zaman et al., 2020). By contrast, IDPs mostly have more flexibility in choosing their settlement locations but often end up settling in environmentally vulnerable areas due to economic constraints. For example, displaced floodplain populations in Bangladesh often resettle in various high-risk areas in urban peripheries, such as squatter settlements

near abandoned brick yards or along erosion-prone riverbanks (Hutton & Haque, 2003). In Pakistan, flood-affected IDPs frequently settle in areas that remain vulnerable to future flooding, which leads to repeated cycles of displacement (Shah et al., 2025).

In addition, and as discussed before, refugees, though constrained by their legal status, can often benefit from more structured international support in dealing with environmental challenges, though this support may be insufficient (Abbas et al., 2024). For instance, refugees in Kenya's Kakuma camps have received targeted livelihood assistance through organized support programs (Kinyanjui, 2025). In contrast, while IDPs theoretically have better access to national infrastructure and services, their abilities to access local government support are hindered due to various barriers. As a result, they remain more reliant on informal social networks for dealing with environmental stresses.

However, across both displacement groups, poor infrastructure further intensifies their exposure to climate-related hazards. Multiple studies in our sample emphasize that poor access to basic services such as clean water, sanitation facilities, electricity supply, and roads exacerbates the vulnerability of refugees and IDPs (Hassan & El-Hag, 2024; Khan et al., 2025; Mitu et al., 2022; Samaraweera, 2018; Zaman et al., 2020).

In summary, the studies in our final sample underscore that a combination of environmental pressures with other vulnerabilities creates compounding challenges for displaced populations, who face the pressure to navigate both immediate climate-related threats and longer-term concerns related to food security and economic stability.

Livelihood Opportunities and Adaptive Capacities in Displacement Settings

In this section, we describe our findings on how livelihood opportunities shape the adaptive capacities of displaced communities in the context of climate change. Across different contexts, we find that displaced communities face a complex web of challenges that demand both climate-specific adaptations and broader, general adaptive strategies. The studies also showcase that displaced communities are developing diverse strategies to build resilience against multiple pressures. A closer look at these strategies reveals a complex interplay between targeted climate-specific adaptations and broader survival strategies.

Some communities have reportedly developed specialized responses to climate-related threats. In Kenya's Fafi and Dadaab regions, which host over half a million refugees, communities have implemented a range of adaptation strategies, such as pasture conservation, adoption of improved livestock breeds, water harvesting techniques, and planting trees that provide multiple benefits such as fodder and green fertilizers (Mwaura et al., 2013). Similarly, in the Bangsamoro region of southern Philippines, displaced populations are integrating local knowledge and practices to enhance climate resilience (Delina et al., 2025).

In Bangladesh's Cox's Bazar, Rohingya refugees demonstrate how climate-specific adaptations have become central to daily life. Households have learned to respond swiftly to early warning systems by storing non-food items above ground and by stockpiling dried food and medicine in preparation for any impending disaster. They have also adopted specific techniques for strengthening their shelters using improvement kits distributed by humanitarian agencies (Zaman et al., 2020). At the same time, Rohingya communities are gradually building broader resilience through engagement in small income-generating activities, language-based education, and skill development programs (Islam et al., 2022).

Furthermore, across the studies, we note that humanitarian actors have played a critical role in mitigating the adverse impacts of climate hazards on forcibly displaced populations (Hassan & El-Hag, 2024; Samaraweera, 2018; Zaman et al., 2020). These actors also have the potential to promote long-term adaptation strategies, rather than focusing solely on immediate needs. In Lebanon, for example, the UNRWA launched a tree planting and street cleaning initiative that engaged Palestinian adolescent refugees. Such programs can generate both positive economic and environmental effects, while fostering community participation (Devonald et al., 2022).

Concerningly, we also find that some displaced groups are adopting crisis adaptation mechanisms. In Bangladesh's riverine areas, displaced communities reduce food consumption as a coping strategy (Hossain et al., 2022). Even more worryingly, declines in agricultural production in Chad and resulting severe food insecurity have led some individuals to turn to distress coping strategies such as survival sex or joining armed groups and community militias (Musa et al., 2022).

The role of community networks in building resilience also emerges as a key component in a few studies. In Uganda, informal social protection networks were effective in supporting the resettlement of displaced populations by providing financial assistance, help with housing construction, and transportation (Oryema, 2017). Similarly, Samaraweera (2018) highlights how unaffected communities, along

with community networks and shared assets, were instrumental in the recovery process of the affected populations following floods in Sri Lanka.

Integrating Adaptation Approaches

These experiences point to an important insight: effective approaches to building adaptive capacity do not treat climate resilience and general resilience as separate challenges. Instead, successful approaches integrate both elements and recognize that environmental protection and economic opportunities are critically interconnected. Whether through community-based adaptation programs (Bezgrebelna et al., 2024) or initiatives that combine literacy improvement with education and awareness on dealing with climate disasters (Zaman et al., 2020), the most promising approaches address both immediate climate challenges and broader drivers of vulnerability.

Access to sustainable livelihoods plays a crucial role in linking climate-specific and general adaptive capacities. Communities with diverse income sources show lower levels of vulnerability, while limited livelihood options often create negative feedback loops. Moreover, the success of integrated adaptation approaches heavily depends on policy support. Where institutions enable market access and skills development, communities show better adaptation outcomes. However, restrictive policies, such as denying legal approval to work, can undermine both climate-specific and general adaptive capacities.

Overall, our review highlights multiple critical ways in which livelihood access mediates the relationship between climate events and the adaptive capacity of displaced populations:

1. **Livelihood Access as a Buffer.** When communities have access to diverse and stable livelihood options, they show greater resilience to climate shocks. For example:
    a. In Bangladesh's Char areas, livelihood diversification efforts promoted by national and international organizations have contributed to improved disaster preparedness (Hossain et al., 2022).
    b. In Kenya's Kakuma camp, access to financial services and non-farm business opportunities was observed to reduce the vulnerabilities of refugees (Kinyanjui, 2025).

2. **Negative Feedback Loops.** Several studies highlight how limited access to livelihood opportunities can create downward spirals:

a. Climate events damage existing livelihood assets (e.g., through flooding or erosion).
b. Without access to livelihood generation, these losses are not adequately mitigated, which prevents the recovery or accumulation of new assets. Thus, adaptive capacities remain low or can even deteriorate further.
c. Reduced adaptive capacity, in turn, increases vulnerability to future climatic hazards and events, reinforcing the cycle.

3. **Resource Access and Adaptation.** Livelihood options directly influence access to adaptation resources:
    a. Communities with access to livelihood opportunities can invest in various forms of livelihood assets, such as physical, social, financial, and human capital, which foster climate-specific adaptations.
    b. Limited livelihood options, in contrast, force reliance on unsustainable coping strategies, such as reducing food consumption or relying on child labor, which ultimately increases the vulnerability of displaced populations to future climate events.

4. **Institutional Mediation.** The effectiveness of livelihood access on adaptation depends heavily on institutional frameworks:
    a. Where policies support access to labor markets and skills development, communities show better adaptation outcomes.
    b. Conversely, restrictive policies that limit economic participation or constrain mobility weaken adaptive capacity.
    c. Institutional support can also facilitate access to credit, climate information systems, and early-warning systems, which are critical adaptation strategies.

5. **Skills and Training as Critical Links.** The ability to adapt to climate events is closely tied to the availability and relevance of skills training:
    a. Access to vocational and livelihood training improves adaptive capacities.
    b. Match between skills and local market needs are critical.
    c. Skills that support income diversification can be particularly effective.

6. **Social Capital Interaction.** Social capital can contribute to adaptation:
    a. Informal social protection networks, such as community networks, religion, and kinship ties, become crucial when formal livelihood options are restricted.

7. **Long-term Implications.** The role of livelihoods extends beyond immediate adaptation:
    a. Communities with sustainable livelihood options experience better long-term adaptation.
    b. Aid dependency, especially in the absence of livelihood interventions, can undermine adaptive capacity.
    c. Investment in livelihood diversification supports both immediate and long-term resilience.

A Combination of Short-term Relief and Long-term Livelihood Support

The selected articles emphasize that focusing solely on immediate relief can inadvertently mask underlying climate vulnerabilities and leave these vulnerabilities unaddressed. When communities receive only short-term assistance without longer-term adaptation support, they often remain exposed to future climate shocks, leading to cycles of vulnerability and dependency.

Across multiple studies, we find discussions advocating for initiatives that not only provide short-term relief but also support long-term livelihood access. These approaches help displaced populations build livelihood assets and reduce their exposure to future risks. For example, both Kinyanjui (2025) and Mitu et al. (2022), when examining the contexts of Kenya and Bangladesh, respectively, highlight the importance of integrating short- and long-term interventions. Kinyanjui (2025) recommends training refugees in drought-resistant farming, which is particularly relevant as many refugee camps in Kenya are located in arid and semi-arid regions. This could meet immediate food needs while also building resilience to future droughts. The author also calls for easing restrictions on refugees' access to non-farm labor markets and argues that livelihood diversification can bolster financial security and reduce susceptibility to future climatic events.

Along the same lines, Mitu et al. (2022) stress the importance of improving adolescent Rohingya refugees' capabilities through a combination of short- and long-term actions. Short-term measures include reinforcing shelters, increasing gas supplies, and expanding solar lighting inside the camps. Long-term strategies involve policy reforms to expand educational and economic opportunities to Rohingya refugees in Bangladesh.

The policy recommendations in the reviewed studies also underscore the importance of integrating immediate relief with long-term climate adaptation. This includes

promoting sustainable resource management and introducing circular economy strategies within displacement camps. Geofrey and Tumwine (2023) highlight the potential of sustainable farming and energy-saving practices, such as substituting firewood and charcoal with biogas, as effective measures to reduce deforestation and mitigate environmental degradation around camps. In another study, Tiwari et al. (2023) advocate for internal camp-based initiatives like small-scale vegetable farming to help meet local food demands. They also recommend the establishment of community kitchens, food distribution hubs, and recycling centers within camps. These initiatives not only address challenges related to food security and waste management but can also create employment opportunities for refugee populations. This can potentially contribute to livelihood generation, environmental sustainability, and climate resilience.

Overall, our reviewed articles illustrate the central role of livelihood access in shaping the adaptive capacities of displaced communities facing climate-related risks. Across diverse contexts and populations, effective adaptation emerges not from isolated climate-specific interventions but from strategies that integrate economic opportunity, environmental sustainability, and social cohesion. Livelihoods serve as both a buffer against shocks and a foundation for long-term resilience, and in turn, shape how communities respond to, recover from, and prepare for climate impacts. Where displaced populations can access diverse income sources, skills training, and supportive institutions, they demonstrate greater ability to navigate the compounded challenges of climate and displacement pressures. In contrast, when livelihood options are constrained by legal, economic, or environmental barriers, vulnerability deepens, and adaptive capacity remains weak. These findings, thus, suggest that building adaptive capacity in displacement settings requires a dual focus on both short-term relief and long-term livelihood support, guided by inclusive policies and grounded in sustainable resource management.

Conclusions

Livelihood opportunities and access to labor markets can critically influence the self-reliance and self-sufficiency of forcibly displaced populations. In this study, we argue that the creation of livelihood assets can also enhance the climate resilience of IDPs and refugees. The review showed that across diverse contexts, displaced populations face multiple, intersecting barriers—including legal restrictions, lack of documentation, gender and age discrimination, and landlessness—that limit their economic stability and increase their vulnerability. While refugees often experience formal constraints linked to their legal status and camp-based living, IDPs in the selected articles often face practical challenges accessing services despite retaining

citizenship rights. Both groups endure protracted displacement conditions that deepen poverty cycles and dependency on humanitarian aid, undermining self-reliance over time.

Climate-related hazards such as floods, droughts, and cyclones were reported to exacerbate these vulnerabilities by intensifying resource competition, degrading local environments, and threatening livelihoods. Although refugees in organized camps may receive more humanitarian support, inadequate infrastructure and overcrowding increase environmental risks. In contrast, IDPs' more dispersed settlement patterns provide some flexibility but also result in uneven access to aid and heightened exposure to environmental hazards. Ultimately, refugees and IDPs share the challenge of sustaining livelihoods and adapting to overlapping and compounding climate and displacement pressures.

Policy Implications

This study has generated several key conclusions regarding the role of livelihood opportunities in the climate adaptation strategies of displaced populations. First, **successful adaptation emerges where communities effectively combine climate-related strategies and more general livelihood strategies**. The integration of economic and environmental resilience strategies is essential to enable displaced populations to respond not only to immediate climate risks but also to the underlying structural vulnerabilities that shape their long-term well-being. In our review, we highlighted the case of Uganda, where the poor quality of allocated agricultural lands is undermining refugees' livelihoods (T. Kaiser, 2006) and possibly increasing the risks of further degradation during future droughts. While land allotment has the potential to enhance self-reliance among refugees, such interventions need to be complemented with climate-resilient strategies, such as the provision of drought-resistant crops, fertilizers, and training on crop management during extreme weather events, to ensure that refugees can sustain their self-reliance trajectory even in the face of climate change. Another effective intervention is introducing vegetable farming within camps to help meet local food demands, complemented with community kitchens that can also generate employment (Tiwari et al., 2023). These livelihood interventions must also be inclusive, considering the diverse and often context-dependent challenges faced by women, youth, the elderly, and people with disabilities in accessing sustainable livelihoods.

Second, this integration requires **strong institutional support for livelihood opportunities**. Access to sustainable livelihoods proves crucial in linking climate-specific and general adaptive capacities. Communities with diverse income sources show greater resilience to climate shocks, while limited livelihood options

often create negative feedback loops. Our review shows that refugees frequently struggle to build sustainable livelihoods due to mobility restrictions and limited access to formal labor markets, which also exposes them to exploitation in informal settings. Camp-based initiatives that enhance access to financial services and promote participation in non-farm businesses can reduce vulnerabilities. However, these initiatives must be complemented by institutional measures, particularly policy-level approaches that expand refugees' access to broader labor markets within host communities. Integrated adaptation strategies can only succeed when supported by enabling policies. For instance, relaxing mobility restrictions would allow refugees to pursue non-agricultural employment in nearby urban centers. When combined with interventions like those put forward by Caria et al. (2024), which facilitate better job matching between refugees and employers, such measures can help refugees shift to non-agricultural sectors during the times of climate shocks and lean agricultural seasons.

Third, a **combination of immediate relief and long-term capacity building** seems to be essential to effectively adapt to a changing climate. Across multiple displacement contexts, climate change creates a complex web of challenges that demand both immediate response and long-term adaptation planning. While humanitarian aid remains essential in addressing immediate needs in displacement contexts, prolonged reliance on aid without parallel investments in livelihood generation reinforces cycles of dependency. This dependency limits the ability of displaced populations to build autonomy, accumulate assets, and adapt to future climate risks. We emphasize that combining immediate relief and long-term approaches is crucial, as climate impacts demand both urgent response and sustained efforts to build resilience. For instance, unconditional cash transfers can address urgent needs of the displaced communities by meeting consumption demands and easing liquidity, and freeing time for job searches. However, when complemented with long-term capacity-building initiatives, such as training on climate-resilient agriculture, language-based education, and vocational skill development, these measures can collectively foster long-term adaptive capacities.

Moreover, success requires sustained institutional support, community engagement, and flexible implementation approaches that can adapt to changing climate conditions. Community-based support systems are essential in coping with climate stresses. These informal structures can complement formal interventions, especially in contexts where institutional support is weak.

Lastly, our review shows how poor infrastructure, including inadequate housing, roads, sanitation, and limited energy access, exacerbates exposure to climate risks. The studies in our sample highlight that weak infrastructure, especially, compounds challenges faced by IDPs in the aftermath of climate disasters by disrupting informal

trade routes, undermining livelihoods, and limiting their ability to relocate to safer areas. For refugees, poor road infrastructure also hampers the integration into host labor markets by challenging travel to schools and to work sites. Governments and humanitarian actors should, therefore, prioritize the development of **climate-resilient infrastructure** to improve safety, enhance mobility, and facilitate better access to markets and services.

In addition, our review illustrates that displacement settings often place pressure on local environments, which can intensify climate risks. In this regard, introducing circular economy approaches, such as recycling hubs, energy-saving technologies, and launching reforestation initiatives, can help reduce environmental degradation, support local livelihoods, and strengthen climate resilience in the long run.

Based on our review, the most effective interventions are most likely based on holistic approaches that combine:

- Climate-specific responses (like drought-resistant agriculture and disaster preparedness)
- Economic strengthening (through skills training, labor market access, and access to education)
- Social protection mechanisms (such as unconditional cash transfers)
- Climate-resilient infrastructure
- Support for community-led adaptation and informal networks

Finally, and most importantly, there is a critical need for more evidence on the long-term impacts of livelihood interventions on climate resilience. We advocate that policymakers and implementing agencies should therefore embed monitoring and impact evaluation frameworks into their climate-sensitive program designs. This will support evidence-based decision-making, improve accountability, and enable continuous learning.

Research Gaps and Future Directions

This review highlighted significant gaps in our understanding of the role of livelihoods in the adaptive capacities of displaced communities.

1. Thematic and Conceptual Gaps

While several of the studies included in the review primarily addressed general livelihood challenges associated with displacement, the climatic hazards and events were mentioned only in passing. This reflects a broader pattern identified in prior reviews, where climate change is often acknowledged as a contributing factor to livelihood vulnerability but not consistently treated as a central focus. This limits our ability to identify clear causal links between climate events, livelihood shifts, and

adaptation outcomes. In addition, the literature often fails to clearly distinguish between climate-specific adaptation strategies and broader, non-climate-targeted responses. This lack of conceptual clarity makes it difficult to assess the effectiveness of climate-focused interventions. To address this gap, future studies should develop clearer conceptual frameworks to distinguish between climate-specific and adaptation strategies, focus more explicitly on the causal pathways between climate impacts, livelihood disruptions, and adaptive responses, and explore how integrated livelihood strategies function in climate-exposed displacement contexts and how they differ from general livelihood responses.

2. Geographic Gaps

While South Asia and East Africa are well-represented in the literature, our knowledge of adaptation strategies remains geographically limited. Notable blind spots include Latin America and the Caribbean, where no studies were conducted, as well as Small Island Developing States (SIDS), Central Asia, and most of the Middle East. This restricted geographic scope constrains our understanding of how adaptation strategies might vary across different environmental, social, and political contexts. Future research should therefore expand the geographic focus to underrepresented regions, particularly SIDS, Latin America, Central Asia, and the Middle East, to examine how different environmental stressors (e.g., sea level rise vs. drought) influence the kinds of adaptation strategies used by displaced populations, and investigate how governance structures and institutional capacity in these diverse regions mediate adaptation outcomes.

3. Demographic and Population Gaps

Population coverage presents another crucial limitation in current research. Studies focus on displaced populations but rarely address sub-groups within these populations. Only two studies specifically examined adolescents' experiences, while just one study focused on women's particular challenges and adaptations. Significantly absent is research on elderly or disabled peoples' adaptation strategies. Host communities, despite their crucial role in displacement contexts, received attention in only a few studies. These demographic gaps limit our understanding of how different population groups experience and adapt to climate challenges, potentially leading to oversight of crucial vulnerabilities and opportunities. Promising avenues for future research include a focus specifically on underrepresented groups, including women, youth, elderly people, people with disabilities, and host communities, studies that investigate how gender, age, and ability shape adaptive capacity and access to livelihood resources, and studies that explore intersectional barriers that may limit participation in adaptation programs or livelihood interventions.

4. Methodological Limitations

From a methodological perspective, our review found that there are few longitudinal studies tracking long-term outcomes, making it difficult to assess the sustainability of various adaptation strategies. Quantitative impact evaluations remain limited, while comparative analyses across different contexts are rare. These methodological limitations significantly affect our ability to measure intervention effectiveness and understand long-term adaptation patterns across different settings. Future research should therefore invest in longitudinal designs to assess how livelihood strategies evolve over time in response to climate events, conduct mixed-method impact evaluations of adaptation programs, with both quantitative outcomes and qualitative insights, and design comparative studies across regions, interventions, or policy frameworks to identify scalable best practices.

5. Critical Knowledge Gaps on Livelihood Interventions

Beyond broader thematic and methodological issues, this review highlights several specific areas where knowledge remains limited. One major gap is the lack of evidence on the cost-effectiveness of different adaptation intervention strategies. While many interventions claim to support climate resilience through livelihood support, few studies evaluate whether these strategies are effective or sustainable in the long term. Without such assessments, policymakers and practitioners struggle to prioritize or scale interventions based on evidence.

Another underexplored area is the role of traditional knowledge in shaping adaptive responses. In many contexts, displaced communities draw on long-standing environmental practices and local wisdom to navigate climate challenges. However, the literature rarely engages deeply with these knowledge systems or assesses how they might complement or conflict with formal adaptation intervention strategies. As a result, potentially valuable community-based approaches remain overlooked in program design and policy development.

The effectiveness of policy frameworks in enabling or constraining adaptation among displaced populations also requires more research. While some studies mention the role of government or institutional support, few analyze how specific policies—such as land tenure, legal status, or access to services—influence adaptation outcomes. A deeper understanding of these policy dynamics is needed to ensure that interventions are not only effective but also supported by enabling environments. Finally, gender-specific adaptation intervention strategies represent another critical blind spot. Although some studies highlighted how women and girls often face distinct climate-related risks and livelihood barriers, most studies do not differentiate adaptation experiences along gender lines. This lack of gender analysis limits the

development of responsive strategies that could address specific vulnerabilities and capacities within displaced populations.

Addressing these critical knowledge gaps will require targeted research efforts that move beyond general descriptions and engage more directly with the specific mechanisms shaping adaptation in displacement contexts. Doing so can generate more actionable insights for programming, funding, and policy development. It also requires a shift toward more inclusive, context-sensitive, and methodologically rigorous studies. Future research must move beyond documenting challenges to identifying what works, for whom, and under what conditions. To be most useful, research should align closely with the practical needs of displaced communities, while informing the policies and programs designed to support them. Only through such focused and holistic inquiry can we strengthen our collective capacity to support displaced populations as they navigate the compounding risks of climate change and livelihood disruption.

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Appendix A

Search Query

Category	Keywords
Climate Hazards	Climate*, weather, temperature*, warming, slow-onset events, rain*, precipitation, drought*, rapid-onset events, flood*, desertification, disaster*, storm*, cold, heat, flashflood*, cyclone*
Displaced population	Refugee*, displacement settlement*, displacement camp*, internally displaced people, internally displaced person*, IDP*, asylum, asylum seeker*, displace*, displacement*, displaced population*
Labor markets and livelihoods	Labor, labor market*, livelihood*, employ*, job*, economic integration, business*, income, self-employ*, agricultur*, farm*, livestock, vocational, training, remote work*, freelancing, skill*, industry*, cash-for-work, artisanal, communit*, public works, microfinance, finance*, credit, informal, cash-grants
Adaptation	Adapt*, resilien*, self-relian*, vulnerable, vulnerabilit*, climate risk*, exposure, impact*,

Appendix B

List of Studies

Title	Author(s)	Year	Country	Region	Population
Disaster risk reduction in conflict contexts: Lessons learned from the lived experiences of Rohingya refugees in Cox's Bazar, Bangladesh	Zaman et al.	2020	Bangladesh	South Asia	Refugees
Climate Risks and Truncated Opportunities: How Do Environmental Challenges Intersect with Economic and Social Disadvantages for Rohingya Adolescents in Bangladesh?	Mitu et al.	2022	Bangladesh	South Asia	Refugees
The Impact of Social Protection on Resettlement of Displaced Persons: Evidence From Post-Conflict Northern Uganda	Oryema et al.	2017	Uganda	Africa	IDPs
Neoliberalism, Climate Change, and Displaced and Homeless Populations: Exploring Interactions Through Case Studies	Bezgrebelna et al.	2023	Multiple countries: Kenya, United States, Canada	Middle East and North Africa (MENA), Africa (Kenya), North America (United States and Canada)	Refugees, IDPs
Impact of land acquisition for large-scale agricultural investments on vulnerability of displaced households to climate change shocks in Ethiopia	Kebede et al.	2022	Ethiopia	Africa	IDPs
Socio economic and health challenges of internally-displaced persons as a result of 2012 flooding in Nigeria	Amoo et al.	2018	Nigeria	West Africa	IDPs
How climate change and insecurity pushed 5 million people to hunger in Chad, Africa	Musa et al.	2022	Chad	Africa, specifically the Sahel and West Africa	Refugees, IDPs
Echoes of the Sudan war and its social and economic repercussions on the city of Port Sudan	Hassan and El-Hag	2024	Sudan	Africa	IDPs
Coping strategies identified and used by victims of flood disaster in Kolonnawa area:	Samaraweera	2018	Sri Lanka	South Asia	Refugees, IDPs

An analysis from a social work perspective					
Sustainable refugee camp design in the Dalhamyie settlement (Bekaa, Lebanon) for climate change context	Tiwari et al.	2023	Lebanon	Middle East and North Africa	Refugees
Between a camp and a hard place: rights, livelihood and experiences of the local settlement system for long-term refugees in Uganda	Kaiser	2006	Uganda	Sub-Saharan Africa	Refugees, IDPs
The Impact of Poverty on the Livelihoods of Internally Displaced Persons Galkio Puntland Somalia	Abdi	2025	Somalia	Africa	IDPs
Assessment of Adaptation Strategies and Knowledge on Climate Change among Pastoralists and Agro-Pastoralists in Fafi and Dadaab Ecosystems	Mwaura et al.	2013	Kenya	East Africa	Refugees
The sustainability-peace nexus in crisis contexts: how the Rohingya escaped the ethnic violence in Myanmar, but are trapped into environmental challenges in Bangladesh	Ahmed et al.	2021	Myanmar, Bangladesh	South Asia, Southeast Asia	Refugees
The 2022 floods in Khyber Pakhtunkhwa, Pakistan: an assessment of the impacts on the Afghan Refugees	Abbas et al.	2024	Pakistan	South Asia	Refugees
Analysis of the livelihood and health of internally displaced persons due to riverbank erosion in Bangladesh	Kaiser	2023	Bangladesh	South Asia	IDPs
Sustainable Livelihood for Displaced Rohingyas and Their Resilience at Bhashan Char in Bangladesh	Islam et al.	2022	Bangladesh	South Asia	Refugees
The Impact of Refugee Settlement on Landscape and Green Environment in Yumbe District West Nile Sub Region, Uganda	Geofrey and Tumwine	2023	Uganda	East Africa	Refugees, IDPs
Health and livelihood impacts of flood hazards on internally displaced persons in Pakistan	Shah et al.	2025	Pakistan	South Asia	IDPs
Patterns of Coping and Adaptation Among Erosion-Induced Displaces in	Hutton and Haque	2003	Bangladesh	South Asia	IDPs

Bangladesh: Implications for Hazard Analysis and Mitigation					
Access to Livelihood Assets and Vulnerability to Lower Levels of Well-Being in Kakuma Refugee Camp, Kenya	Kinyanjui	2025	Kenya	East Africa	Refugees
Balancing Immediate Relief and Resilience: Centring Local Voices for Disaster Aid and Capacity Building in Climate-Conflict Vulnerable Communities	Delina et al.	2025	Philippines	Southeast Asia	IDPs
'We Have No Hope for Anything': Exploring Interconnected Economic, Social and Environmental Risks to Adolescents in Lebanon	Devonald et al.	2022	Lebanon	Middle East and North Africa	Refugees
Climate change induced human displacement in Bangladesh: Implications on the livelihood of displaced riverine island dwellers and their adaptation strategies	Hossain et al.	2022	Bangladesh	South Asia	IDPs
Echoes of Survival: Climate Change Impact & Typologies of Adaptation among Vulnerable Communities toward Climate-Induced Food Insecurity in Pakistan	Khan et al.	2025	Pakistan	South Asia	IDPs