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From Ravaged Livelihoods in the Global South to Mediterranean Crossings: The Reality of Climate Migration

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Abstract

The Mediterranean Sea is the focus of our research, as it is a major migration corridor from Africa and Asia, with Greece serving as a key entry point to Europe. Based on 70 semi-structured interviews with migrants, refugees, and asylum seekers currently residing in Greece and Belgium, this article examines how individuals from climate-vulnerable regions in South Asia, sub-Saharan Africa, and the Middle East shaped their decision to migrate away from their home countries. Employing the testimonies and data collected through the interviews, we investigated how disasters due to extreme weather, such as floods, droughts, and heatwaves, which have been inarguably linked to climate change, intersect with traditional migration drivers such as poverty, conflict, and human rights violations. While perceptions of the role of climate change as a factor in the movement of people who have already come to Europe as refugees or asylum seekers may vary, our findings based on their own statements reveal that climate-related disasters triggered their displacement. Our research reveals that climate migrants are not a future reality; rather, many have already reached Europe seeking safer livelihoods. By anchoring personal narratives in verifiable climate events, this article underscores the need to acknowledge climate-related mobility as a fact and a multifaceted issue—one that calls for revisiting conventional categories of forced migration and protection and prioritising climate action in the Global South.

Keywords

climate migration; cross-border migration; Global South; Mediterranean Sea

1. Introduction

Climate-induced migration is often framed as a future challenge on a rapidly warming planet. Despite the Intergovernmental Panel on Climate Change's (IPCC) "low confidence" in climate-induced cross-border migration to Europe as a current reality (Pörtner et al., 2022, p. 1867), our evidence suggests that the impacts of climate change are already interwoven into desperate and life-threatening migration pathways from vulnerable countries in the Global South towards safer destinations in Europe.

According to the UN Refugee Agency, the Mediterranean Sea is a major migration crossing, with a total of 139,550 arrivals in 2025 (UN High Commissioner for Refugees, 2025), of which 131,856 (94.5%) by sea. Greece, a migration hotspot in the Eastern Mediterranean route, recorded 41,271 in the same period.

Climate-induced migration is the subject of increasing scholarly attention. Nonetheless, the majority of existing research predominantly addresses internal displacement, with comparatively limited focus on cross-border migration (Burzyński et al., 2022; Mastrorillo et al., 2016). Although concerns have been raised about the quantitative studies carried out mainly by international organizations regarding the reliability of calculations and/or models for estimating the number of climate-displaced persons in the future (International Organization for Migration, 2023), there is a common view that cross-border climate displacement exists as a phenomenon and as a trend and that climate change is directly or indirectly linked with the movement of people (Czaika & Münz, 2022; Perch-Nielsen et al., 2008).

In this article, we use the term climate-induced migration to refer to human mobility in which climatic and environmental factors act more as contributory or interactional drivers of movement, rather than sole or deterministic causes. Drawing on Black et al. (2011), climate-induced migration exists as a result of climate change interacting with political, economic, and social factors. Through this definition, it becomes clear that climatic stressors such as droughts, floods, extreme heat, sea-level rise, or ecosystem degradation rarely exist in isolation. Instead, they affect mobility through various routes, including livelihood disruption, declining habitability, and reduced adaptive capacity (McLeman, 2014; UK Government Office for Science, 2011).

The majority of existing qualitative studies focus on the causes of migration or on conceptual approaches (Doussis & Psatha, 2024; Gemenne et al., 2018). While Powell (2022) argues that empirical research studying how migrants residing in Europe understand climate change remains comparatively limited, subsequent scholarship has begun to investigate these interconnections more systematically. For instance, Van Praag et al. (2021) contribute with an empirical study on how migrants interpret environmental change within the broader context of factors shaping their migration aspirations. Their findings suggest that perceptions of environmental degradation do not operate in isolation but intersect with economic, social, and political considerations in ways that complicate linear understandings of climate-related mobility. Taken together, this emerging body of work within migration studies and environmental sociology demonstrates that migrant perceptions of climate and environment-related risks are more heterogeneous.

In the context of a joint initiative, the Greek Council for Refugees (GCR) and WWF Greece investigated the underexplored role of climate-related factors in the displacement of migrants now residing in Greece and Belgium, focusing on individuals from climate-vulnerable countries in South Asia and sub-Saharan/Central Africa.

In this article, we do not seek to quantify the role of climate-related disasters in migration decisions. Instead, we seek a qualitative investigation into how climate change interacts with other structural drivers of displacement (i.e., economic hardship, human rights violations, war, conflicts, etc.), thus amplifying, reinforcing, or co-evolving with them. In addition, drawing on original empirical data, we sought to understand how displaced individuals themselves interpret and articulate the significance of climate-related events, within their broader migration narratives. Furthermore, drawing on data from the narratives and responses of the survey participants, this article examines specific climate events affecting the regions they come from and which played or may have played a role in their decisions to leave their countries.

2. Research Design

In our research, we developed a qualitative framework in order to examine the perceptions and lived experiences of migrants originating from 18 countries across South and Southeast Asia (8), the Middle East (3), and sub-Saharan Africa (7). The migrants invited to participate in the survey originated from countries that represent some of the most significant sources of refugee and asylum-seeker arrivals to Europe in recent years. Their countries of origin were identified through existing climate vulnerability research as highly sensitive to the impacts of climate change, experiencing recurrent environmental stressors such as droughts, floods, extreme heat, and land degradation. By engaging individuals from these contexts, the study aims to capture both the human dimension of climate vulnerability and the broader migration dynamics shaping contemporary displacement toward Europe.

During the research, we conducted in-person interviews with a total of 70 individuals who migrated from their countries of origin towards Europe and during the research period resided in Greece and Belgium. The 18 countries of origin (Figure 1) were Afghanistan (9), Angola (1), Bangladesh (5), Cameroon (2), Democratic Republic of the Congo (DR Congo; 2), Egypt (7), Eritrea (1), Gabon (1), Iraq (1), Iran (2), Morocco (3), Pakistan (9), Philippines (1), Republic of the Congo (1), Sierra Leone (2), Somalia (4), Sudan (7), Syria (11), and one (1) stateless person.

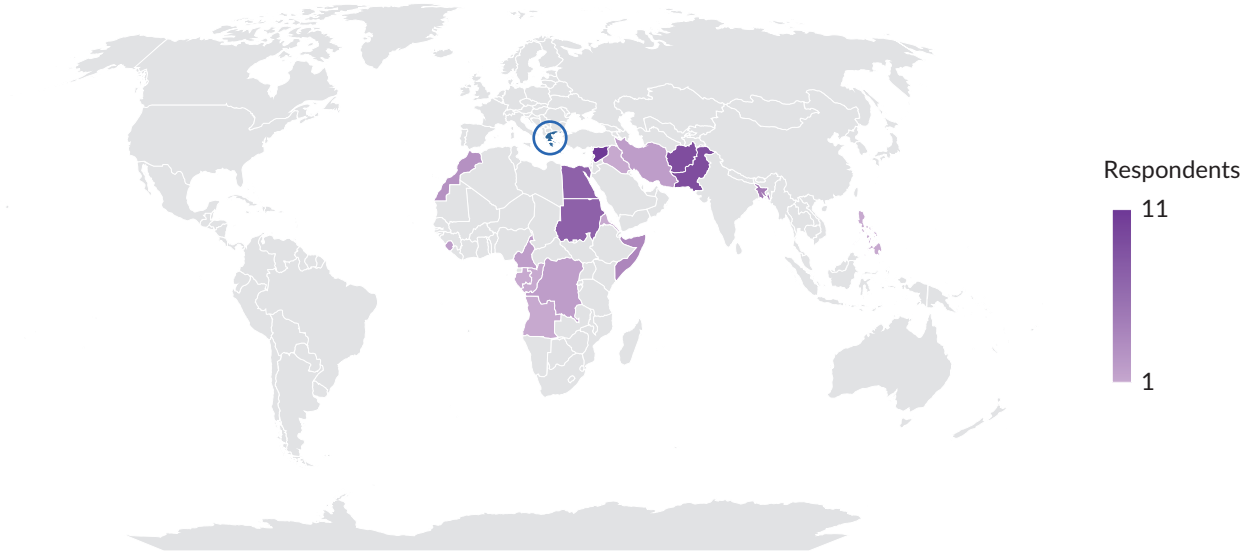

Figure 1. The 18 countries of origin of the 70 respondents to the GCR and WWF survey on climate migration. Note: Greece in a circle.

Of the 18 countries of origin of the participants in our survey, eight are included in the UN's list of Least Developed Countries, which are the characterised by the lowest income indicators and are particularly vulnerable to environmental and economic crises.

Participants were engaged through semi-structured interviews. With the help of an interpreter present in all interviews, the survey was structured using a standardized questionnaire organized into six thematic sections:

1. **Demographics:** Questions recording basic data (age range, gender, and country of origin).
2. **Displacement background:** Questions exploring the broader context of migration, including primary drivers (climate disasters, environmental degradation, or other), the abruptness or gradual nature of displacement, and any internal migration prior to crossing international borders.
3. **Climate dimensions of migration:** In eight structured questions, participants were invited to identify climate-related hazards and their impacts as direct or indirect factors influencing their decision to migrate. The participants were presented with a list of climate-related acute or chronic events (e.g., prolonged droughts, floods or storms, rising temperatures, desertification or land degradation, sea-level rise, coastal erosion, etc.) and associated impacts (e.g., loss of livelihoods in agriculture or fisheries, destruction of housing, food and water insecurity, health impacts such as malnutrition or heat stress, etc.). Participants were also asked about adaptation strategies at the individual, community, and governmental levels. Based on answers to the prompt "did climate-related factors (e.g., floods, drought, sea level rise, etc.) influence your decision to leave in any way?" each participant's climate profile was categorized as *Yes* (primary), *Yes* (secondary), or *No*. This helped in developing an initial "climate profile" of the migrants participating in the survey.
4. **Multi-causality of displacement and the role of climate change:** This section probed participants' awareness on the perceived interactions with other structural stressors, such as conflict, human rights violations, and socio-economic pressures (e.g., unemployment, resource competition, etc.).
5. **Current challenges:** This section included two questions on the support participants need in order to rebuild their lives in their host country, providing insights into post-migration vulnerabilities.
6. **Personal narratives:** An open-ended section encouraged participants to share their stories in their own words, offering space for reflection beyond the structured interview format.

The last part, which allowed the participants to freely express their personal narratives on the impact of extreme disasters or slow-onset impacts on their livelihoods, focused on explicit references that the migrants made to specific disasters. These were then fact-checked through attribution studies and were found to have been linked to climate change.

Based on their replies to the question whether climate-related hazards influenced their decision to migrate, respondents were categorised as: "No climate profile"; "yes, primary climate profile" (i.e., climate hazards were their primary driver in their migration decision); and "yes, secondary climate profile" (i.e., climate hazards did indeed influence their migration decision, but were not the sole reason). On certain occasions, participants in the survey requested more explanation about the term "climate hazard," in which case the interviewer replied, "extreme weather events, such as destructive floods and storms, or heatwaves."

This methodological framework enabled a multidimensional understanding of how climate-related and structural drivers intersect in shaping migration decisions, while foregrounding the voices and agency of affected individuals. All interviews were anonymous in order to create a safe space for the participants.

The interviews took place in the following locations: 14 at the closed controlled access centre of Lesvos; 5 at the Amygdaleza pre-departure detention centre; 11 migrants residing in and employed in farms in Achaia (Peloponnese region); 16 migrants currently residing in Belgium, through interviews conducted by the law firm DLA Piper; 8 interviews at polyclinics operated by the Global Brigades in Athens, where migrants and asylum applicants seek medical care and support; 12 migrants currently residing in Athens, hosted by the Melissa Network for Migrant and Refugee Women in Greece and Mazi Housing Project; and 4 migrants currently residing in Athens, interviewed at the office of GCR.

Collecting data through interviews was not without difficulties and obstacles. Obtaining official permits to access migrant detention centres and closed controlled access centres (CCAC) proved more challenging than initially anticipated, ultimately resulting in fewer days available for interviews.

3. Ethical Considerations

Conducting surveys based on personal interviews with migrants, especially persons held in detention centres and CCAC entails heightened ethical obligations. The vulnerable position of the interviewed migrants and the power imbalance between the researchers and the participants, language barriers, and cultural sensitivities are key challenges that require pre-emptive attention at the survey planning stage. The need to communicate the framework and scope of the survey with clarity and to create a safe space within which participation is explicitly voluntary, while avoiding triggering distress and indirectly influencing their responses, as their disadvantaged position undermines their autonomy, is among the priorities (Davidson et al., 2024).

The structure of our survey and the interviews was developed in line with the European Commission's guidance on research with migrants (European Commission, 2020). The Commission's note outlines ethical, methodological, and data protection considerations that need to be taken into account during interviews with vulnerable migrants and refugees. It highlights the principles of treating participants with care and sensitivity, being objective and transparent, neutral with regard to ethnicity, language, religion, and gender/sexual orientation, and respecting their values and beliefs.

Personal data protection is a principle of paramount importance, especially acknowledging the vulnerability of migrants and refugees. Prioritising the need to protect the participants' personal data, we conducted only anonymous interviews. The requested demographic data were basic (country of origin, gender, and age range) and made it impossible to establish any links between the responses and the responders, especially in the context of the migrant detention centres in Lesvos and Amygdaleza.

At the planning and design phase, our team prioritized structuring the entire survey in a way that would ensure that participants were neither coerced nor encouraged to respond to questions they did not fully understand. Accordingly, the key question determining a respondent's climate profile was framed objectively, and subsequent sections of the interview were contingent on their binary ("yes" or "no") response to whether climate change had, in any way, influenced their decision to migrate. In the case of "no" replies, when the participants mentioned conflicts and wars, persecution, or family reunification reasons for their migration, the survey was concluded. In the cases where a participant replied that their reason for migration was economic, then the next questions in the same section sought a deeper understanding of the

perceived causes of economic hardship that led them to migrate and whether they thought that weather extremes had any impact on their economic situation.

During the survey, the research team was also mindful to establish communication in the native language of the participants, through interpreters employed by the GCR, whom the participants knew and trusted. Building trust in the objectivity of the survey was crucial throughout the research; the structure was clear and communicated to each participant in simple language from the beginning.

4. Background

4.1. Greece, a Migrant Gateway to Europe

This research focuses predominantly on migrants currently living in Greece. Given the country's geographical position at Europe's southeastern front door, Greece is a major hotspot for migration flows from the continents of Asia and Africa. Hence, research on the role of climate-related displacement in migrant communities in Greece is important in better understanding broader migration dynamics.

Drawing from the EU data on asylum applications, which are indicative of the total migration flows to Greece from various countries, we observe that a total of 376,045 individuals from the countries of origin represented in our research have arrived in Greece and sought asylum during the decade spanning 2015 to 2024. Nationals of Syria constitute the predominant group of first-time asylum seekers, with a total of 120,535 applicants, followed by Afghanistan (91,110), Iraq (41,245), Pakistan (40,400), Egypt (15,975), and Bangladesh (13,150). The significance of Greece as a pivotal gateway for migrants to Europe is underscored by the fact that in 2024, Greece accounted for 5% of the total first-time asylum applications in the EU from nationals of Pakistan (5%), from Afghanistan (20.98%), from Bangladesh (2%, drop from 13% in 2021), from Sierra Leone (27%, down from 32% in 2023), from Sudan (16%), from Somalia (8%), and from Syria (15%; Table 1).

Table 1. Asylum applications (first-time applicants) in Greece, by country of citizenship, over the period 2015–2024.

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	Country total
Syria	3,325	26,630	16,305	13,145	10,750	7,415	2,945	4,280	13,865	21,875	120,535
Afghanistan*	1,545	4,295	7,480	11,820	23,665	11,100	3,195	4,085	8,770	15,155	91,110
Iraq	575	4,770	7,870	9,640	5,590	1,465	990	2,030	6,080	2,235	41,245
Pakistan	1,505	4,420	8,345	7,185	6,420	3,515	3,415	2,555	1,965	1,075	40,400
Egypt	230	260	810	915	1,695	710	775	1,335	2,160	7,085	15,975
Bangladesh*	535	1,055	1,255	1,435	2,375	1,625	2,480	1,280	340	770	13,150
Somalia*	95	125	230	715	2,270	1,530	1,485	1,985	2,840	1,390	12,665
DR Congo*	110	225	1,085	1,450	3,570	1,850	565	465	1,255	185	10,760
Iran	190	1,085	1,295	1,730	2,325	835	575	415	620	755	9,825
Eritrea*	135	415	320	330	305	200	140	630	1,810	2,255	6,540
Cameroon	165	210	455	1,035	855	395	190	250	615	250	4,420
Sudan*	115	45	85	80	90	50	55	455	970	1,490	3,435
Sierra Leone*	25	40	45	85	120	75	90	880	1,190	675	3,225
Morocco	65	460	425	355	260	175	115	200	195	150	2,400
Angola*	—	—	10	10	50	40	15	20	25	5	175
Philippines	5	5	5	5	10	5	10	5	15	60	125
Gabon	5	5	10	10	5	5	0	5	10	5	60
Year total	53,8145	122,8230	121,6690	677,205	629,655	703,840	453,095	558,645	902,805	110,7405	376,045

Note: Marked with an asterisk are those classified as least developed countries. Source: Eurostat (n.d.).

4.2. Climate Change as a Migration Driver

Social research exploring the impact of the climate crisis on vulnerable communities in the Global South projects that the increasing frequency and severity of climate-induced "natural" disasters will result in "a mass exodus of entire populations on a biblical scale" (Guterres, 2023). Social research examining the differentiated impacts of the climate crisis on vulnerable communities in the Global South consistently shows that climate-related hazards—such as prolonged droughts, intensified cyclones, sea-level rise, and extreme heat—disproportionately undermine livelihoods, food security, and habitation conditions (Almulhim et al., 2024; Ngcamu, 2023). Studies of agrarian, coastal, and informal-settlement populations document that these recurrent shocks erode adaptive capacity and can precipitate both temporary and permanent displacement (Mamba et al., 2025; Tavares et al., 2024). A growing body of work, therefore, anticipates that, as these pressures accumulate, large-scale population movements—both internal and cross-border—may become increasingly common in the absence of viable adaptation pathways (Almulhim et al., 2024). At the same time, it is widely believed that:

> Ascertaining the role of climate change in migration is difficult and contested…with observation-based studies either linking extreme event incidence, weather anomalies and environmental change with migration numbers or drivers, and projection studies looking at particular risks such as SLR or drought by linking increasing warming (often through representative concentration pathways, RCPs) and population growth. (Pörtner et al., 2022, p. 1469)

Fieldwork by the GCR, in years prior to this research, has revealed strong evidence that individuals living in migrant camps in Greece cite environmental degradation and climate disasters as key factors that compelled them to flee their home countries. One specific example is the case of a survivor of the devastating Pylos migrant boat disaster, one of the deadliest in the Mediterranean Sea, which claimed the lives of more than 650 people. The Pylos survivor, a national of Pakistan, stated that the primary reason he fled his country was due to repeated and intensifying climate disasters in his region (Survivor of the Pylos Shipwreck, 2023). He recounted that his home and fields were located near a river that was repeatedly flooded with increasing frequency, leading to the complete loss of his property and crops. This left him with no choice but to risk his life, ultimately surviving one of the deadliest shipwrecks in the Mediterranean in recent years.

Cross-border climate displacement cannot be reduced to a linear chain of cause and effect. As a growing body of research acknowledges, displacement is driven by a web of interlocking forces: economic marginalization, social exclusion, conflict and war, and demographic pressure and political instability, interacting across time and space (Black et al., 2011; Czaika & Münz, 2022) and further aggravated by the low adaptation capacity and climate resilience of the countries of origin.

In this study, we build a conceptual framework that focuses on the role of climate change as an amplifier/multiplier of the pressures that lead to displacement, mainly structural vulnerabilities and conflicts. This approach aligns with scholarship describing climate as a "threat multiplier" (Abel et al., 2019; Nett & Rüttinger, 2016), especially in fragile contexts where environmental shocks intensify food insecurity, disrupt livelihoods, and accelerate economic precarity. For example, in rural agricultural areas, erratic rainfall or salinization may diminish crop yields and livestock health (Afifi, 2011; Di Falco & Veronesi, 2014), compounding already unstable income streams. In such cases, climate change heightens existing social and economic fragility, serving as a magnifier of displacement risk rather than a primary driver.

5. Empirical Evidence

5.1. Climate Profile of Respondents

According to Pörtner et al. (2022, pp. 929–930):

> The complexity of migration drivers (as push or pull factors) explains why there is little agreement around quantitative estimates on migration (especially international) triggered by climate change (I. M. Otto et al., 2017; Silja, 2017), and why estimates of future displacement attributed to climate change and other environmental causes vary between 25 million and 1 billion in 2050 (Heslin et al., 2019).

During our research, we confirmed the indications stemming from everyday interaction with migrants (either asylum applicants or persons sweepingly classified under the broad category of "economic migrants") that persons displaced by climate change are not a future prediction. Involuntary displacement caused by the climate crisis is already happening.

As shown in Figure 2, 50% of the respondents (i.e., 35 individuals) replied that their migration decision was influenced by climate factors. Eighteen individuals (26% of the total people interviewed) stated that climate was the sole or primary reason for cross-border migration, while 17 (24%) mentioned climate events as their secondary reason for migration.

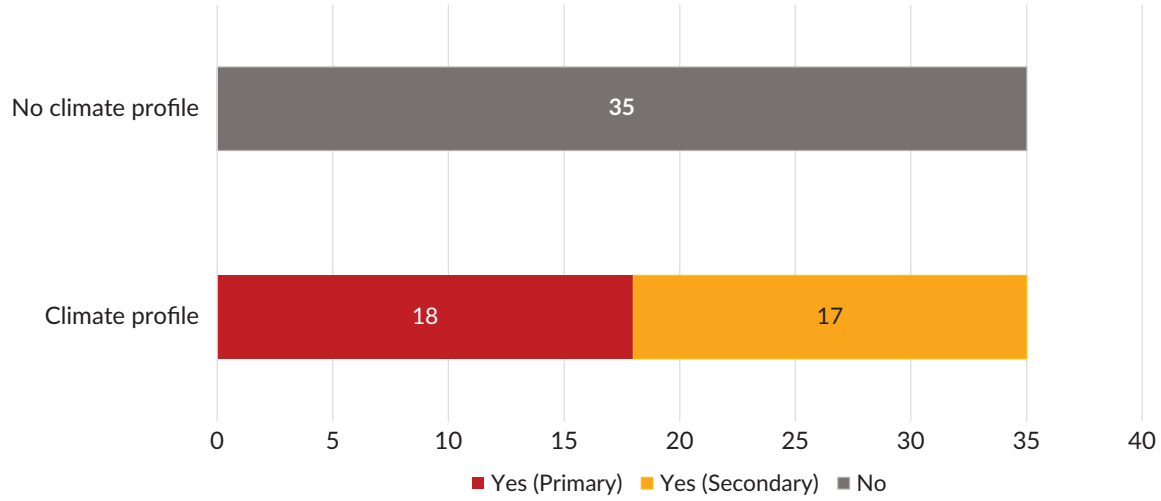

Figure 2. Profile of respondents with relation to the role of climate change in their decision to migrate.

By country of origin of the respondents who declared a climate profile, we see that eight out of the ten are included in the UN's list of Least Developed Countries. The severe economic hardship facing these states, which are at the same time particularly vulnerable to disastrous weather extremes, renders their communities least resilient to the impacts of climate change.

Although the number of participants in the survey (Figure 2) is not statistically representative of the total migrant population per country of origin, the results are nonetheless indicative of the fact that climate

change is already decisively influencing people's decision to migrate cross-border away from their native lands. The main research question of our survey is whether people displaced by climate change have already arrived in Europe. The results are compelling, since half of the respondents identified a distinct climate-related profile, either as a primary or secondary factor.

As shown in Figure 3, 100% of the respondents from three countries, included in the UN Least Developed Countries list, declared a climate profile, either as the primary or secondary cause of displacement: Somalia, DR Congo, and Sierra Leone.

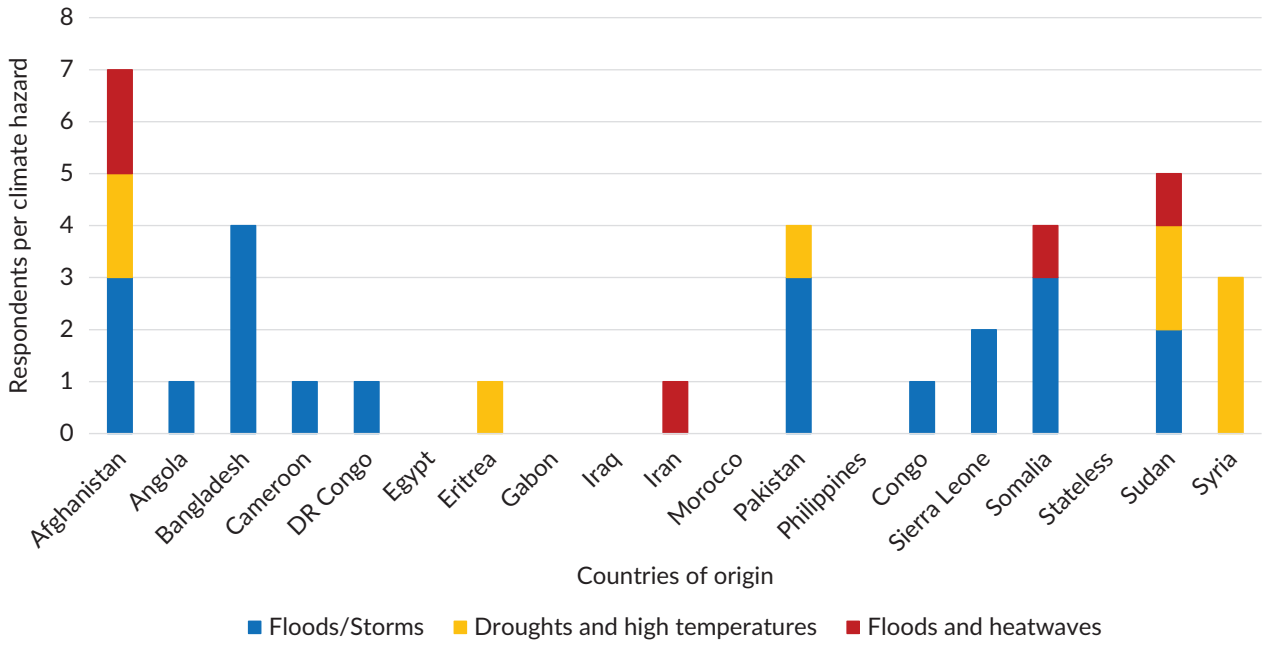

Figure 3. Number of respondents with a climate-related migration profile who identified specific climate hazards as the primary or secondary driver of their displacement.

In more detail, all four migrants from Somalia stated climate extremes as the primary reason for their decision to migrate: three mentioned floods and storm and one person mentioned floods and high temperatures, while all four stated that their homes were repeatedly destroyed and their means of subsistence, i.e., productive lands and cattle, were lost in the waters. Health problems caused in the flooded areas and lack of food and potable water made these dire conditions even worse.

The two migrants from Sierra Leone, the first interviewed at the Lesvos CCAC and the second in Athens, mentioned massive floods as their primary cause for migration. One of the two left the country after the deadly floods and mudslides that ravaged Freetown in 2019, which have been attributed to climate change. The second migrant, a woman in the age range of 18–24, stated specifically that:

> We experience flooding, we lose our properties, clothes, [and] house items. All infrastructure is destroyed. Most people lose their homes and the government provides accommodation in the national stadium. The poor, those who are living in the slum areas, are those affected the most. It also takes weeks to go again to schools. Some lose their jobs. Some families lose their children, especially

> babies. They are trying to build the houses again in the drain period. There was a time when I was in school and the water was up to the first floor, in the next-door class. The teacher urged us to go out, otherwise we will sink and drown. We didn't sleep in the house; we slept at the national stadium. My skin was full of rash.

One of the migrants from the DR Congo mentioned disastrous floods, coupled with persecution and conflicts, as his primary cause for migration in 2017, also stating that he did not even try to move within the country. The second migrant from DR Congo mentioned prolonged droughts, caused by increasing temperatures, as his primary cause for migration, which was further aggravated by conflict and the lack of support from the state.

In Table 2, we present the categorisation of the respondents per country (a total of 70), sub-categorized according to their stated climate profile and climate displacement cause (this category includes only the 35 migrants who declared climate change as their primary or secondary cause for cross-border migration).

Table 2. Respondents (n = 70) per country, categorised (a) according to their stated climate profile (primary, secondary, and none) and (b) according to their stated climate displacement cause (n = 35).

Country of origin	Total participants	Climate as primary cause of migration	Climate as secondary cause of migration	No climate profile	Climate displacement causes		
					Floods/ Storms	Droughts and high temperatures	Floods and heatwaves
Afghanistan	9	3	4	2	3	2	2
Angola	1	0	1	0	1	0	0
Bangladesh	5	3	1	1	4	0	0
Cameroon	2	1	0	1	1	0	0
DR Congo	2	0	2	0	1	0	0
Egypt	7	0	0	7	0	0	0
Eritrea	1	0	1	0	0	1	0
Gabon	1	0	0	1	0	0	0
Iraq	1	0	0	1	0	0	0
Iran	2	0	1	1	0	0	1
Morocco	3	0	0	3	0	0	0
Pakistan	9	2	1	6	3	1	0
Philippines	1	0	0	1	0	0	0
Congo	1	0	1	0	1	0	0
Sierra Leone	2	2	0	0	2	0	0
Somalia	4	4	0	0	3	0	1
Stateless	1	0	0	1	0	0	0
Sudan	7	3	2	2	2	2	1
Syria	11	0	3	8	0	3	0

Our findings reveal that while many self-identify as "economic migrants," the majority of respondents described disastrous events (particularly massive floods, prolonged droughts, and heatwaves) as major contributors to local economic and social breakdowns. In some cases, one particular event is described as the immediate cause of displacement. For example, South Asian workers in the Peloponnese identified the

2022 floods in northeastern Bangladesh as the decisive factor, although their personal understanding of the origin of this calamity was different from the scientific attribution: they stated their belief that the floods were acts of God and were unaware of the reality of climate change. Respondents from sub-Saharan Africa described how environmental degradation, erratic weather patterns, and disappearing livelihoods shaped their need to relocate.

As shown in Figure 4, developed on the mapping background of the climate-conflict-vulnerability index, all 35 participants with a climate profile migrated to Greece from countries that are already exposed to climate hazards or are subject to the compound risk of climate, conflict, and socio-economic vulnerabilities. Sixteen migrants described the deteriorating climate conditions as the culmination of multiple stressors, which devastate local economies in countries with weak institutional capacity to protect their citizens and adapt to climate change. Two migrants, one from Afghanistan and one from Somalia, stated the unbearable climate conditions and floods as the single cause for their migration. Health problems and social disruption followed environmental shocks, as participants reported outbreaks of diarrhoeal diseases, skin infections, and respiratory illnesses after floods, while one migrant from Sierra Leone stressed long interruptions to schooling as the norm for families affected by the increasing flood events.

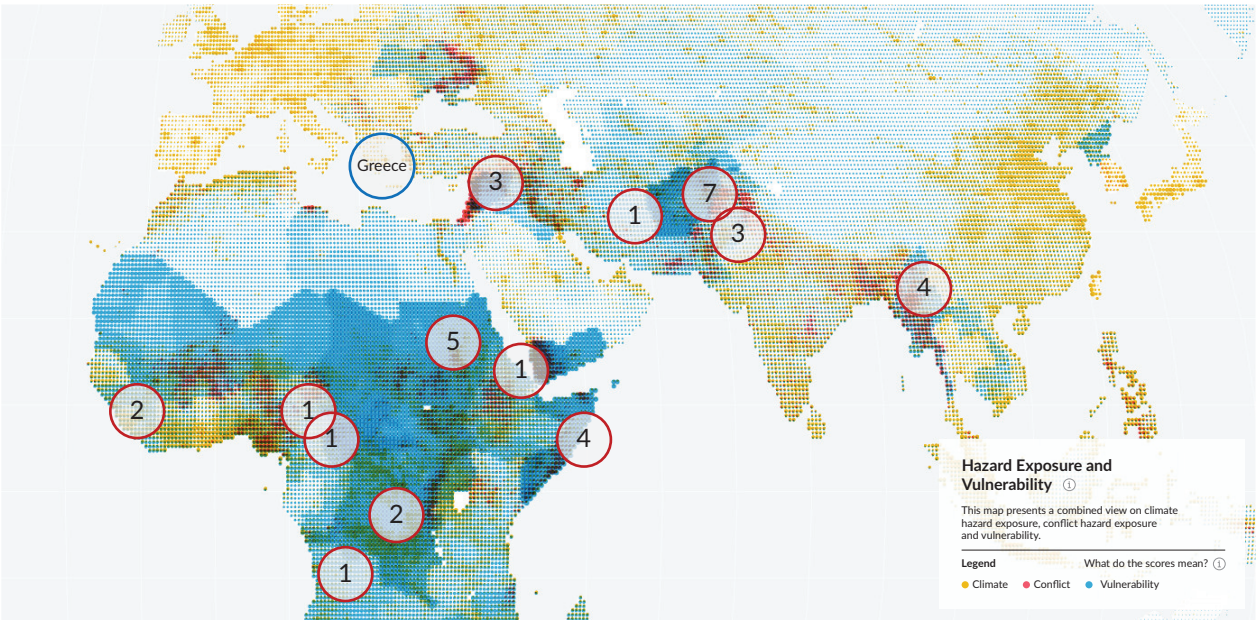

Figure 4. Countries of origin of the migrants with a climate profile, projected on the climate-conflict-vulnerability map. Note: All participants originated from countries experiencing high vulnerability to climate change, on most occasions combined with conflict hazard exposure and socio-economic and/or political vulnerability. Source: Climate–Conflict–Vulnerability Index (n.d.).

Another interesting finding relates to the efforts of the migrants who declared a climate profile to adapt to climate stress. Specifically, 18 (five from Afghanistan, four from Bangladesh, three from Sudan, one from Sierra Leone, one from Cameroon, one from Pakistan, one from Syria, and two from Somalia) out of the 35 migrants (51.5%) with a climate profile stated that they did not wish to leave their home countries, so initially they moved within their country, while six mentioned that during their movement within their country they also changed profession after having lost their source of income locally.

An unexpected finding was the difference in climate-related narratives between migrants from sub-Saharan Africa and those from North Africa. Notably, all 10 North African migrants interviewed—seven from Egypt and three from Morocco—indicated that climate change did not influence their decision to migrate to Europe. Further research is necessary in order to better understand the social and religious perspectives on climate change within North African communities. Additionally, region-specific factors, including traditional migration routes linking the African and European parts of the Mediterranean, might provide context for this stark differentiation between the respondents from Egypt and Morocco compared to those from other countries. Important insight into better understanding the Moroccan context on climate issues is provided by Van Praag et al. (2021). Their analysis is based on 48 interviews with migrants from Tangier and Tinghir, Morocco, to Belgium, and concludes that while deteriorating environmental conditions and economic opportunities exist, the Moroccan migrant communities in Belgium perceive family-related reasons as the main factors shaping their migration aspirations. As evidenced in Van Praag et al. (2021), geographical proximity and cultural exchanges facilitating migration in recent Mediterranean history may be the reason for the absence of climate-related narratives from respondents in our research originating from Egypt and Morocco.

The majority of the interviewed migrant workers from South Asia in the Peloponnese initially reported that they consider themselves "economic migrants," while they did not know anything about climate change. They denied any causality between their economic situation and the effects of climate-related events and expressed their belief that other forces brought these disasters upon them. As the interview and the discussion progressed, they repeatedly mentioned extreme climate conditions, primarily more frequent massive flooding events, while some eventually realised and concluded that the definitive cause of their decision to leave their home country was a particular climate disaster (like the 2022 floods in northeastern Bangladesh).

Individual perceptions of environmental change are shaped by a range of factors, including how each person acquires and processes information about these changes (Weber, 2010), the nature of their livelihoods (Bollig & Schulte, 1999; Mbow et al., 2008; Mertz et al., 2010), and the influence of traditional knowledge systems and local narratives (Berkes & Berkes, 2009; Bollig & Schulte, 1999). Demographic characteristics—such as household composition or patterns of labor migration—also play a role (Mertz et al., 2010), as do representations in the media (Marin & Berkes, 2013). Furthermore, cultural and religious frameworks shape how environmental risks are perceived, interpreted, and managed, grounded in shared understandings of vulnerability and threat (Leclerc et al., 2013; Mertz et al., 2010; Vedwan, 2006).

Our interviews with the migrants declaring a climate profile revealed that the impact of climate change on their livelihoods and economic activities was immense and led to their eventual cross-border displacement and migration, either as a primary or secondary driver (Figure 5).

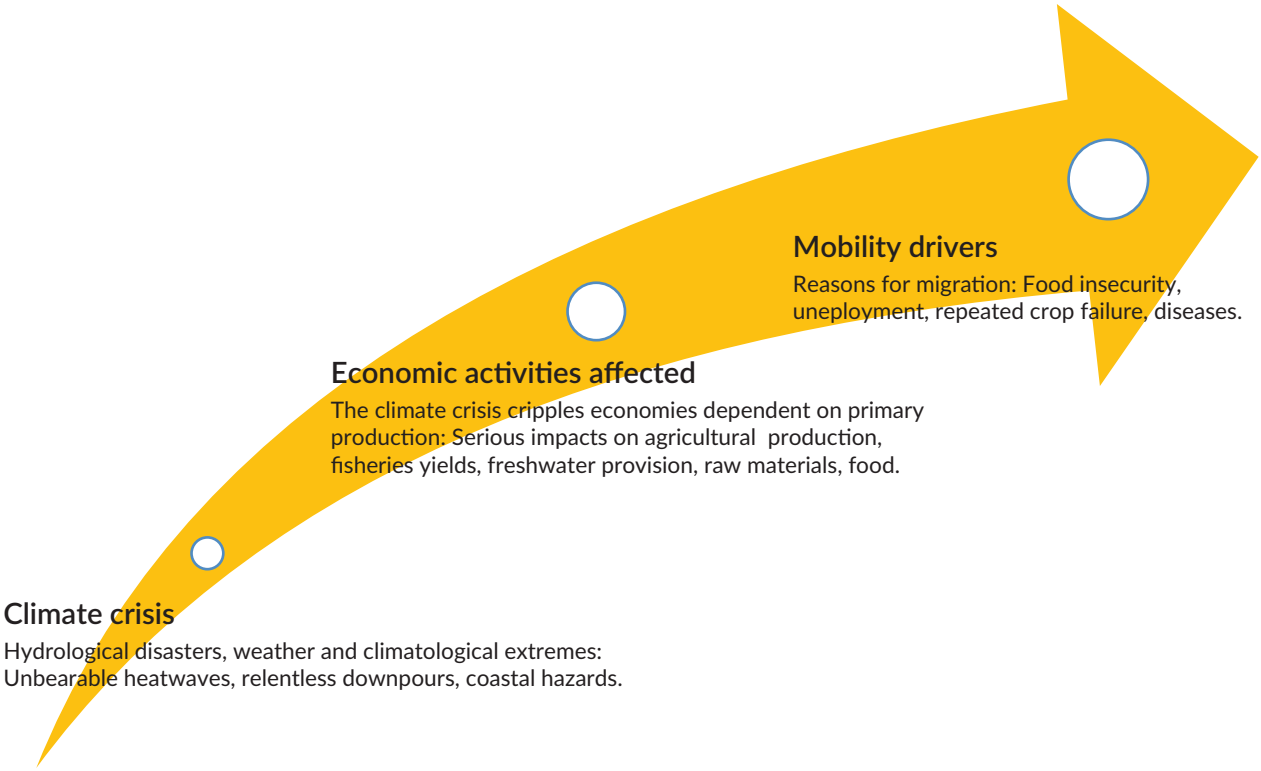

Figure 5. Links between climate change, the state of economies heavily dependent on primary production, and no resilience to the impacts of climate change and human mobility.

5.2. Testimonies of Climate-Induced Migration

The stories of many migrants who participated in the research focused on the plight caused by repeated and relentless storms and floods, unbearable heatwaves, lost crops, dry wells, barren soils, fewer fish, harder to secure food of the day, vanishing communities, and homes. The diminishing adaptation capacity of the already weak economies in their home countries, combined with their high dependence on healthy natural ecosystems, made their families and communities particularly vulnerable to climate change and extreme weather events. Selected testimonies are listed below.

Testimony of a 19-year-old migrant from Baghlan, Afghanistan. He burst into tears while narrating his traumatic personal story during the interview, at the camp of CCAC of Mavrovouni, on Lesvos Island:

> There have been many floods causing destruction to homes. Over the past five months, things have worsened. We have no access to clean water and must fetch it from the city using donkeys. Everything is destroyed. I lost my farming job and was mostly unemployed due to floods. Many people leave at night to escape, as during the day, people drown or die. I lost my mother and brother in a flood last year that struck early in the morning and swept through the village.

Testimony of a migrant from Sylhet, Bangladesh, now working as a strawberry farmer in the Peloponnese, Greece. Interviewed on 27 March 2025, in the village of Lappas, Achaia:

> Since the very first day we begin to understand life in Bangladesh, we think of leaving. Because of poverty and repeated disasters.

Testimony of a migrant from El Geneina, Sudan, interviewed at the Lesvos CCAC:

> We cannot cultivate anything. People are dying from drought due to [a] lack of drinking water. No help comes from the government or organizations. In 2022, sudden floods broke the dams due to [a] lack of maintenance, forcing people into the streets. The poor are suffering and remain unaided.

Migrant from Sialcot, Pakistan, interviewed in Athens:

> Every year, our village is flooded. And the water reaches the middle of the house. But we consider it normal. Most people leave. Some go to relatives in town. Others go and stay in schools that don't flood. I was in Pakistan about 10 years ago, in 2014. Then it was a big disaster. Many people from my village were killed, like my neighbour. All the houses were destroyed.

Migrant from Takhar, Afghanistan, interviewed at the Lesvos CCAC:

> Every time it rains, villages flood and suffer extensive damage. Floods affect everyone, especially those with farmland. No help is available. We must pay for road repairs ourselves. Under the previous government, there was some support. Under the Taliban, there is none. People are in shock, with no access to food, water, or healthcare. A few days ago, my brother told me there was another major flood.

5.3. Attribution of Extreme Events to Climate Change

Respondents reported having suffered the catastrophic impacts of weather events, which have been scientifically attributed to climate change. In one of the interviews, a responding 19-year-old migrant from Afghanistan broke into tears as he recounted losing his mother and brother in the catastrophic floods of 2023 in Baghlan, after having already suffered repeated flood disasters in previous years (see full testimony in the previous section). The events mentioned by interviewed migrants as contributing or decisive factors for their displacement were checked in relation to the influence of climate change on their intensity and frequency.

Specific disasters mentioned as life-changing events that shaped their decision to migrate are the following:

- **2017 mudslides in Freetown, Sierra Leone:** The mudslides that ravaged Freetown, capital city of Sierra Leone, in August 2017, killed almost 1,000 people and caused over 3,000 to be involuntarily displaced (Kpaka, 2020). The deadly mudslides were caused by the unusually heavy rainfall, which scientifically has been attributed to climate change. This beautiful and biodiversity-rich country of Western Africa, whose economy relies heavily on agriculture and ecosystem services (Convention on Biological Diversity, n.d.), is a climate change hotspot. Mentioned as a defining event that shaped their decision to leave, two Sierra Leoneans stated that the mudslides and floods made living conditions in their homeland unbearable for them.

- **2019 floods in Darfur, Sudan:** The 2019 massive floods in Sudan were the worst in 25 years (Pörtner et al., 2022, p. 1332). The compound of armed conflict, poverty, and inadequate water management heightens the vulnerability of communities to extreme flood events, which have become increasingly frequent and severe under the influence of climate change (Pinto et al., 2024).
- **2022 massive flood in Bangladesh:** Bangladesh, being one of the world's most vulnerable countries to climate change, is seeing more frequent and intense flash floods—especially in the Sylhet region. The floods of June 2022 have been linked to climate change (Raulerson, 2022). A few years earlier, in 2017, "flash flood affected ~850,000 households, ~220,000 ha of nearly harvestable Boro rice damaged. Crop failure contributed to a record 30% rice price hike compared to the previous year" (Pörtner et al., 2022, p. 575).
- **2022 massive floods in Cameroon:** Throughout 2022, a large region in West Africa, including Cameroon, Mali, Nigeria, and Niger, was hit with massive floods resulting from rainfall above average, resulting in the displacement of 1.5 million people. "Climate change made the event about 80 times more likely and approximately 20% more intense," according to a specific attribution study by Zachariah et al. (2022, p. 2).
- **2022 extreme floods in Pakistan:** The extreme rainfall of 2022 and the resulting flooding affected over 33 million people, destroyed 1.7 million homes, and nearly 1,500 people lost their lives. The 2022 extreme monsoon season has been attributed to climate change, according to a specific attribution study (F. E. L. Otto et al., 2025).
- **2024 floods in Afghanistan:** In April and May 2024, large regions of South Asia were hit by a series of storms resulting in heavy downpours and flash flooding, which have been attributed to climate change. The worst-affected country was Afghanistan, where 540 fatalities have been reported. In Pakistan, at least 124 people died in severe flooding in Pakistan in April, while 18 people died in Iran in May. In addition, the heavy rainfall damaged thousands of homes and submerged agricultural lands (Zachariah et al., 2024).
- **2024 Extreme heatwave in the Sahel region:** The extreme Sahel heatwave that hit highly vulnerable populations at the end of Ramadan would not have occurred without climate change (Barnes et al., 2025).

6. Conclusions and Recommendations

As shown in this study, climate-induced displacement and cross-border migration are already happening and are expected to intensify.

During the research conducted by GCR and WWF Greece, all interviewed migrants with a climate profile confirmed that the increasing frequency and severity of disasters induced by climate change devastate local economies in the Global South, amplify inequalities, and overwhelm the limited response and adaptation capacity of their countries of origin. Although more research and a deeper understanding of the need for stronger climate adaptation and governance mechanisms are needed, this reality bears serious policy implications and raises the bar even higher for international climate action and humanitarian support.

6.1. Policy Implications

Recognising cross-border climate migration from the Global South as an established reality carries significant policy implications on both ends: the countries of origin, where displacement occurs, and the host countries, where climate migrants seek safety and protection.

In the legal context opened by the groundbreaking advisory opinion issued by the International Court of Justice on 23 July 2025, states clearly have a legal duty to protect climate migrants and not return them (principle of non-refoulement under the 1951 Geneva Convention) to their country of origin. "Conditions resulting from climate change which are likely to endanger the lives of individuals may lead them to seek safety in another country or prevent them from returning to their own" (International Court of Justice, 2025, para. 378). As highlighted by many commentators (e.g., Riemer, 2025), the International Court of Justice opens the way for the strengthening of the legal protection framework for persons forced by climate change to cross-border displacement, despite refraining from articulating an obligation for a comprehensive protection system for climate migrants.

It is now the time for states to bring the issue of climate displacement and cross-border migration to all relevant international fora on climate and migration, and recognise cross-border displacement caused by climate change as a fact, and develop frameworks that include climate in the national and international protection policy frameworks.

Given the high rate of responses to our survey by migrants stating that they first tried to migrate within their country, as they did not wish to leave, international support towards the Global South for the enhancement of the adaptation and disaster response mechanisms and improved governance systems in climate-vulnerable states gains particular significance. Supporting vulnerable communities whose economies and livelihoods are dependent on natural ecosystems (through agriculture or fisheries) is essential in allowing people to feel safe in the face of climate extremes and disasters.

It is important that climate-induced migration be addressed at all levels as early as possible, in order to avoid humanitarian disasters and unexpected massive flows of displaced people towards safer locations. In the words of the IPCC (2023, p. 104), "migration, when voluntary, safe and orderly, allows reduction of risks to climate and non-climatic stressors."

6.2. Recommendations for Further Research

Our research offers qualitative and narrative-based insights from 70 migrants, refugees, and asylum seekers residing in Europe. Further research is needed in order to better understand the extent of climate as a cause of displacement within current migrant communities and to capture its interaction with other factors in various contexts. With Greece being one of the main countries of entry to Europe for migrants originating from regions of the Global South, and already suffering the severe impacts of climate change, further research should be encouraged, also aiming at reaching statistically significant conclusions about climate change as a displacement driver among migrant and refugee communities. A deeper understanding is also needed with regard to the social aspects of climate migration and particularly its impact on different groups, primarily women and children. It is also necessary to create the conditions for further research that includes

how migrants perceive climate change and how social, religious, political, and other factors shape their perceptions of the role of climate in human mobility.

It is therefore recommended that: (a) migrant reception countries include climate change in the official forms of incoming migrant interviews; (b) NGOs offering support to migrants include in their surveys questions about climate change and the impact on local societies and livelihoods caused by rapid events (disasters) or slow onset changes (e.g., prolonged droughts or repeated floods); (c) state and international migration agencies link data on migration with environmental parameters (such as climate attribution studies and disaster reports) remote sensing data and economic reports on loss of livelihoods in the primary sector (fisheries and agriculture from the countries of origin); and (d) recognizing cross-border migration due to climate change as a current reality is essential for shaping legal protections, climate-resilient development policies in the Global South, and international cooperation in support of communities vulnerable to extreme events and slow-onset impacts of the climate crisis.

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Conflict of Interests

The authors declare no conflict of interests.

Data Availability

Data is available from the authors upon request.

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