SOCIO-PSYCHOLOGICAL PERSPECTIVES ON CLIMATE-RELATED MIGRATION: A SYSTEMATIC REVIEW AND RESEARCH AGENDA

Maria Fernandes-Jesus[*], Annalisa Cecconi[**], Francesca Esposito[**], Maria Vargas-Moniz[***], and Cinzia Albanesi[**]

There have been multiple calls to examine the links between climate change and migration across different fields. This article reviews climate-related migration from a socio-psychological perspective. It examines the topics covered in existing literature, the geographical distribution of studies, and the theoretical and methodological frameworks adopted. A systematic search in peer-reviewed databases was conducted, following PRISMA guidelines and covering studies published until 2 June 2023. Peer-reviewed articles focusing on human climate-related migration, reporting empirical data, and addressing socio-psychological dimensions and/or approaches were included. In total, 25 studies were analysed. Results suggested an increasing interest in the topic in the last decade and that most studies focused on internal migrants. From a methodological perspective, we found a lack of studies using critical and participatory methodologies. Additionally, our narrative synthesis suggested that: socio-political and climate vulnerabilities are intertwined; dimensions of place attachment and sense of community are key in explaining how people deal with climate change and decide to remain or to migrate; communities affected by climate change and climate-related migration face health and well-being challenges. Finally, a few studies suggested the importance of looking at public attitudes towards climate migrants and recognising climate justice dimensions in climate migration. We critically discuss these and other results and possible avenues for future research in the fields of social and community psychology.

Keywords: *Climate change, migration, climate justice, migrant justice, displacement, climate im/mobilities*

1. Introduction

Climate change is devastating people's lives, their communities, livelihoods and places of residence. Every year, an average of 21.5 million people are displaced worldwide, and it is predicted that up to 1.2 billion people will be displaced by 2050 due to climate change-related events (UNHCR, 2016). Climate migration occurs mainly within but also across national borders (e.g., Huang, 2023; Ionesco, 2019). It ranges from mobility as an adaptation strategy to forced displacement in the face of life-threatening extreme weather events such as hurricanes, floods, droughts, water scarcity, and sea level rises (Borderon et al., 2019; Ghosh & Orchiston, 2022;

[*] University of Sussex, United Kingdom; University of Johannesburg, South Africa.
[**] Department of Psychology "Renzo Canestrari", University of Bologna, Italy.
[***] Ispa - Instituto Universitário, Portugal.

McAuliffe & Triandafyllidou, 2022; Miller, 2019). From environmental migrants to climate refugees, many have been the terms used to refer to those "who, predominantly for reasons of sudden or progressive change in the environment due to climate change, are obliged to leave their habitual homes or choose to do so, either temporarily or permanently, and who move either within their country or abroad" (Sironi et al., 2019; p. 31). In this article, we use the term migrants rather than refugees, as there is no official recognition of climate-related migration as a motive to get asylum. Besides, many people migrate due to gradual and long-term environmental change (Koubi et al., 2018) and do not fit the legal requirement to be considered refugees. In line with critical scholarship in the field of migration (e.g., Esposito et al., 2023; Jones, 2017; Sharma, 2020; Stierl, 2019; Walia, 2013), we critique the legally-produced distinction between migrants and refugees as they tend to be arbitrary and divisive. Thus, we use climate migrants or climate-related migrants to refer to those who decide to leave their homes and communities (at least partially) due to climate change and include both internal (e.g., rural to urban) and international (from one country to another) migrants.

Scholars have recently started to examine the complex intersections between migration and climate change (e.g., Smirnov et al., 2022). Despite the increased recognition that migration and climate change are closely intertwined (e.g., Podesta, 2019), empirical research is still limited, as evidenced in previous reviews focusing on climate migration (e.g., Borderon et al., 2019; Hoffmann et al., 2022). Ghosh and Orchiston (2022) examined how climate migration is framed in the overall literature using ProQuest (a database compiling sources within the field of social and political sciences) as the sole database. Piguet et al. (2018) conducted a comprehensive review focusing on the geography of research on environmental migration based on the database CliMig (i.e., a database concentrating on migration, environmental and climate change). Borderon et al. (2019) aimed to systematise evidence on migration influenced by environmental change in African contexts. Obokata et al. (2014) looked at the factors that influence people's migration, considering international migration and excluding other types of migration, such as internal relocation. Hoffmann et al. (2022) focused on quantitative empirical research on climate-related migration from a methodological perspective, highlighting the multiple challenges related to measuring and analysing climate migration. Piguet (2022) recently updated their typology of research methods published 10 years before (Piguet, 2010) based on a new review addressing the methodological approaches followed in existing studies. Our systematic review complements these previous works by focusing on socio-psychological literature and dimensions, searching multiple databases, and examining how the issue is framed in this body of research. As social and community psychologists, we believe that our discipline has a crucial role to play in recognising and addressing climate-related migration. While there has been some work focusing on migration (e.g., Birman & Bray, 2017; Verbena et al., 2023) and climate change (e.g., Fernandes-Jesus et al., 2020; Trott et al., 2020), it is still unclear how emerging studies are addressing the intersection between these two complex phenomena and what approaches are being privileged.

In this article, we report a systematic review of the literature addressing the following research questions: In the broad field of psychology, how is climate-related migration addressed? What socio-psychological processes and perspectives are considered in climate migration literature? What is the geographical distribution of existing research in the field? What methods are used? Additionally, we explored if and how climate justice dimensions are being framed in

this body of scholarship. Previous research has suggested that climate change is fundamentally an issue of climate justice (Mikulewicz et al., 2023; Robinson & Shine, 2018; Sultana, 2021, 2022), involving distributive (e.g., issues of responsibilities and costs of climate change) recognitional (e.g., acknowledge that different groups are impacted differently by climate change), procedural (e.g., fair and transparent representation and participation in climate change politics), and intergenerational aspects (e.g., protection of younger and future generations of climate risks) (Newell et al., 2021). Indeed, climate change disproportionately affects countries located in the so-called Global South and marginalised communities in countries in the so-called Global North. For example, many communities with little responsibility for climate emissions are being forced to leave their homeplaces due to the negative impacts of climate change on their ecosystems (IPCC, 2023; Ghio et al., 2023). Additionally, once on the move, migrants are often invisible in climate change policies (e.g., Chu & Michael, 2019), and climate mitigation and adaptation measures may lead them – and other minoritised groups and communities – to experience displacement as a result of new green climate infrastructures and related risks of gentrification (Anguelovski et al., 2019, 2022). Thus, considering that climate justice approaches are required for addressing any issue related to climate change (Newell et al., 2021; Sultana, 2021), in this review, we look at how and if climate migration has been framed through a climate justice lens. As explained by Sultana (2022), such involves "paying attention to how climate change impacts people differently, unevenly, and disproportionately, as well as redressing the resultant injustices in fair and equitable ways" (p. 118). Ultimately, climate justice is fundamentally the same as social justice (e.g., Ogunbode, 2022) and requires recognising pre-existing social injustices and contesting social structures responsible for oppression, marginalisation, and discrimination (Holland, 2017; Robinson & Shine, 2018; Sultana, 2022).

2.   Methods

This systematic review followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) (Liberati et al., 2009; Page et al., 2021). Overall, the review process involved four main steps: 1) searching in five databases; 2) screening articles based on abstracts; 3) screening articles based on their full text; and 4) qualitative synthesis of the final selected articles. Recognising that grey literature (e.g., reports by non-governmental organisations) is relevant but can be difficult to search and synthesise, in this review, we focused only on peer-reviewed studies addressing socio-psychological dimensions. Books, theses, theoretical articles, non-empirical case studies, and review articles (e.g., systematic reviews) were not included. Only empirical articles with human participants were considered, including quantitative (e.g., survey), qualitative (e.g., interviews), and mixed methods studies. Further eligibility criteria stipulated that those studies addressed the intersection/link between climate change and human migration. As we were also interested in mapping social-psychological literature on the topic, studies were considered in the final selection if they referred to any socio-psychological dimensions, including individual dimensions (e.g., behaviours, emotions), inter-group variables (e.g., group dynamics), and community dimensions (e.g., sense of community, place identity). This latter criterion was applied flexibly as the boundaries between disciplines are often contested and fluid (Scott, 2019).

2.1   Search strategy

Our search was applied to five main databases: Scopus, Web of Science, PsycArticles, APA PsycInfo, and Psychology & Behavioral Sciences Collection. The last two were searched through EBSCOhost. Scopus and Web of Science were used as these are two of the most extensive databases of peer-reviewed literature. To refine our search by subject area, in the Scopus database, we selected the domain of Psychology through the dedicated filter. In Web of Science, we applied all filters beginning with "psy" (e.g., psychiatry, social psychology, clinical psychology, etc.). Additionally, to ensure that we captured all research published in the field, we included three psychological databases: PsycInfo, PsycArticles and Psychology & Behavioral Sciences Collection.

The second author conducted the search between the 5th and 20th of December 2022 and updated it on the 2nd of June 2023. Each database was searched using the following combination of keywords in the title, abstract and/or keywords (except for Psychology & Behavioral Sciences Collection, where keywords were unavailable): "Climate change" OR "Climate crisis" OR "Climate emergency" OR "Global Warming" OR "Greenhouse effect" OR "Climate Disaster" OR "Environmental crisis" OR "Global heating" OR "Ecological crisis" OR " Environmental degradation" OR "Climate Justice" AND "Migration" OR "Migrant" OR "Refugee" OR "Displaced" OR "Displacement" OR "Border" OR "Asylum seeker" OR "Resettlement" Or "Migrant Justice". No language constraints were made, but keywords were entered in English only.

All co-authors were involved in the abstract and full-text screening. The inclusion and exclusion criteria were agreed upon and discussed among co-authors, and each abstract was screened independently by two reviewers/co-authors. A few abstracts did not provide sufficient details to inform our decision and were kept to the following step (full-text screening). In the full-text selection step, each article was double-screened. When there was a lack of agreement between the reviewers, a third co-author checked and contributed to the decision. Following a double-screening approach ensured that we applied the inclusion criteria consistently (Waffenschmidt et al., 2019).

2.2   Analytical Procedure

The qualitative analysis of the papers included in the systematic review was conducted following a narrative synthesis approach, which involves discussing and summarising the findings qualitatively and relying mostly on the use of words and text (Popay et al., 2006). The narrative synthesis was conducted by the first and the second authors, who started by developing an analysis grid covering topics ranging from the context of the study to details about the method and the main findings. To ensure that the analysis grid was applied consistently, we started by independently examining four articles. This first analytical step allowed the authors to familiarise themselves with the data and adjust the grid as they felt necessary to address the research questions.

All articles were examined by the co-authors involved in this final step. Data extracted from each source included the title, authors, year of publication, journal, locality and country where data was collected, type of migration (e.g., internal, international), and sample size. Our analysis grid also included aspects related to the content of the article, including: the theoretical

framework (e.g., place identity theory); frame of migration-climate nexus (i.e., how the relationship was discussed); type of climate change-related impact mentioned and/or drivers of migration (e.g., flood, desertification); research gaps addressed; research questions; main findings; psychosocial dimensions discussed; and limitations identified. Methodological aspects of the studies were also analysed considering the type of approach (e.g., qualitative, quantitative, mixed-methods), the sample size and strategy (e.g., snowballing approach), socio-demographic characteristics of the participants (e.g., age, gender), analytical approach (e.g., thematic analysis). After this coding phase, the first author developed a proposal for organising the main qualitative findings using techniques based on thematic analysis (Braun & Clarke, 2006, 2019). These initial themes were discussed with the second author, and then all co-authors revised the written analysis.

The first author examined each manuscript in detail by focusing on the main topics and associated meanings that were being discussed. For example, we noticed that several articles tended to explain climate-related migration as a result of both socio-political and climate dimensions. Thus, we created a theme named "intertwined socio-political and climate vulnerabilities". Additionally, considering the multiple calls for recognising climate change as a matter of social justice (e.g., Fernandes-Jesus et al., 2020; Sultana, 2021), we looked at whether and how published literature on climate migration explicitly discussed climate justice dimensions. This led us to identify that some articles were explicitly "recognising climate justice". As one of the goals of the systematic review was to identify what topics were more or less represented in the literature, we have developed themes with different prevalence levels. For example, the most prevalent theme is represented in 12 articles, while the least prevalent is only represented in two articles. Overall, themes were organised around five main ideas or meanings, which were shared across several articles. An additional descriptive theme was also included to summarise the theoretical and methodological trends found in published literature.

2.   Results

In the initial search, a total of 627 sources were identified, including 141 from Scopus, 71 from Web of Science, 12 from PsycArticles, 284 from PsycInfo, and 119 from the Psychology & Behavioral Sciences Collection. 165 articles were removed in the identification stage, 386 in the screening stage and 51 in the eligibility stage. In total, 25 studies were included in the review. The main reason for the exclusion of articles in each stage can be found in the flow diagram presented below (see Fig. 1). It is worth noting that three studies appeared to meet the inclusion criteria in the full-text eligibility step but were then excluded when we started coding the articles. Namely, we excluded the study conducted by Dubus (2022), which looked at the experiences of social workers/help providers (e.g., Nongovernmental organisations (NGOs)) working with forced migrants. Whilst "forced migrants" were defined as including "refugees, asylum seekers, undocumented migrants, and climate refugees" (Dubus, 2022; p. 1), data analysis and results were presented without differentiating between the different groups or specifying the perspectives of those who migrate because of climate-related issues. Additionally, the study by Bouchard et al. (2023) was also excluded because it did not present empirical evidence. Finally, the article by Haque et al. (2020) was excluded because it used the same dataset as the article by Haque et al. (2019), and it did not seem to address socio-psychological dimensions.
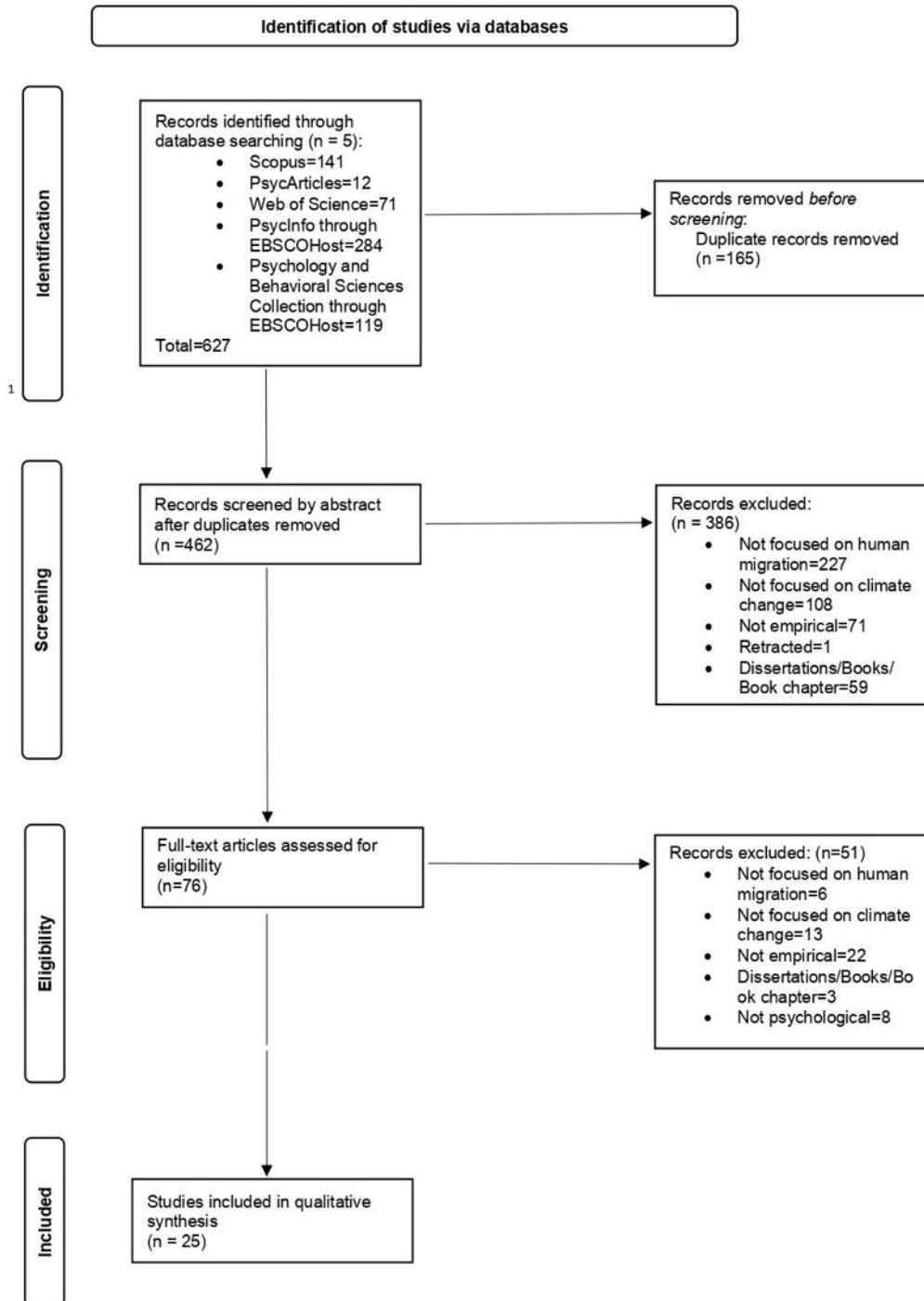
Figure 1. Flow diagram

Table 1 reports the characteristics of the sources analysed, including the year of publication, where the study was conducted and published, sample size, methods used, details related to the participants and their demographics, main themes addressed and a short summary of the main findings.

Table 1. Overview of studies included in the systematic review.

Authors and year of publication	Title and Journal	Setting	Methods	Participants	Main themes	Main findings
Adams, H. (2016).	Why populations persist: mobility, place attachment and climate change. *Population and Environment*	Peruvian Andes, Peru.	Survey with open and closed-ended questions.	433 residents.	Intertwined socio-political and climate vulnerabilities. Loss of place and (sense of) community.	• High levels of satisfaction with the place, resource barriers and low mobility potential were identified as reasons for non-migration. • Place attachment was found to influence immobility in people dissatisfied with their location.
Arias, S. B., & Blair, C. W. (2022).	Changing Tides: Public Attitudes on Climate Migration. *The Journal of Politics*	US and Germany.	Choice-based conjoint experiment (study 1), complementary factorial experiment (study 2)	2160 respondents from general population.	Public attitudes towards climate-related migrants.	• Climate migrants were perceived more favourably than economic migrants but less than refugees. • Empathy towards climate migrants correlated with support for climate migrants. • Favourable attitudes towards climate migrants did not translate into support for climate change mitigation policies.
Ayeb-Karlsson, S., Kniveton, D. & Cannon, T. (2020).	Trapped in the prison of the mind: Notions of climate-induced (im)mobility decision-making and wellbeing from an urban informal settlement in Bangladesh. *Palgrave Communications*	Dhaka, Bangladesh.	Q-methodology and discourse analysis.	62 key informants.	Experiencing health-related challenges. Recognising dimensions of climate justice.	• Immobility was influenced by financial factors (e.g., lack of land or other financial resources) and psychosocial processes (e.g., identity loss and place attachment). • Participants expressed several mental health issues linked to (im)mobility, such as anxiety and stress for the risk of displacement, depression and apathy due to the loss of identity and belonging.

Blakeman, H., Simms, J. R., Waller, H. L., Jenkins, P., & Cass, K. (2023).	Struggle for Transdisciplinary Moments: Building Partnerships for Resettlement. *Sociological Inquiry*	Isle de Jean Charles, Louisiana, US.	Survey with open-ended questions, focus groups, analysis of media sources and documents, and field notes.	17 informants. Other participants are mentioned but not described.	Loss of place and (sense of) community. Recognising dimensions of climate justice.	● Involving community members and taking into account factors that matter to them (e.g., socio-cultural and familial losses) were fundamental elements for achieving a just retreat. ● A transdisciplinary approach to managed retreat was found to help to ensure transformative justice.
Burrows, K., Desai, M. U., Pelupessy, D.C., & Bell, M.L. (2021).	Mental wellbeing following landslides and residential displacement in Indonesia. *SSM-Mental health*	Banjarne gara, Indonesia.	In-depth semi-structured interviews.	21 migrants.	Loss of place and (sense of) community. Experiencing health-related challenges.	● Four key constituents of the participants' experiences during the different phases following a landslide were identified: 1) grief for the losses, 2) changing interpersonal dynamics, 3) challenges to their livelihoods and sense of self and place, 4) rebuilding long-term plans. ● Livelihood, land, and community affected participants' experiences of mental health and wellbeing (e.g., the loss of livelihood can impact one's sense of purpose and stability).
Haque, M. R., Parr, N., & Muhidin, S. (2019).	Parents' healthcare-seeking behavior for their children among the climate-related displaced population of rural Bangladesh. *Social Science & Medicine*	Banglade sh.	Cross-sectional survey.	1200 migrants and residents.	Experiencing health-related challenges.	● Displacement linked to floods and riverbank erosion had long-lasting effects on parents' healthcare-seeking behaviours. ● Despite their children having higher rates of illness, displaced parents were less likely to seek health care. ● Living in geographically remote and socio-economic disadvantaged areas were associated with having displaced children receiving care from untrained providers.

Reference	Title	Location	Methods	Participants	Theme	Findings
Heaney, A.K., & Winter, S.J. (2016).	Climate-driven migration: an exploratory case study of Maasai health perceptions and help-seeking behaviors. *International Journal of Public Health*	Arusha, Tanzania.	Interviews.	28 migrants and residents.	Experiencing health-related challenges. Recognising dimensions of climate justice.	• Migration drivers differed for men and women. • Compared to non-migrants, migrants suffered more and placed higher importance on mental health issues. • Migrants perceived less barriers in accessing healthcare, but migrants and non-migrants had similar health seeking pattern behaviours.
Hossain, B., Shi, G., Ajiang, C., Sarker, MNI, Sohel, M.S., Sun, Z., & Yang, Q. (2022).	Climate change induced human displacement in Bangladesh: Implications on the livelihood of displaced riverine island dwellers and their adaptation strategies. *Frontiers in Psychology*	Gaibandha, Bangladesh.	Questionnaire survey, focus groups, in-depth interviews, key informant interviews, and observations.	280 migrants; 8 key informants.	Loss of place and (sense of) community.	• Char dwellers faced housing and sanitation problems, food uncertainty, health and social issues due to climate change. • Relocation was associated with better access to health, employment, food availability, income, and education, but social capital is deteriorated. • Poor housing and financial conditions were considered barriers to climate adaptation.
Islam, M. R. (2018).	Climate change, natural disasters and socioeconomic livelihood vulnerabilities: migration decision among the char land people in Bangladesh. *Social Indicators Research*	Lalmonirhat, Nilphamari and Pabna, Bangladesh.	Checklists for community mapping, participant observations, structured interviews, focus groups, participant observations, in-depth case studies, key informant interviews.	392 (quantitative) and 77 (qualitative) migrants and key informants.	Intertwined socio-political and climate vulnerabilities.	• Migration was found to be frequent among char people, due to climate, economic and social vulnerabilities. • Living in the char was seen as a temporary arrangement, and migration from one char to another is frequent. • Char people rarely received any kind of training to be prepared to face climate, disasters and compounded socio-economic vulnerabilities, which can be a factor in the decision to stay or to migrate.

|						
Issifu, A. K., Darko, F. D., & Paalo, S. A. (2022).	Climate change, migration and farmer–herder conflict in Ghana. *Conflict Resolution Quarterly*	Ashanti Region, Ghana.	Semi-structured interviews, focus group discussions, documents' analysis.	17 migrants and residents.	Intertwined socio-political and climate vulnerabilities.	• Climate-related migration affected and enhanced farmer-herder conflict in Ghana over water and grassland use. • Socio-political and economic conditions, such as population growth and weak institutions, played a role in the farmer-herder conflict.
Koubi, V., Böhmelt, T., Spilker, G., & Schaffer, L. (2018).	The Determinants of Environmental Migrants' Conflict Perception. *International Organization*	Vietnam, Cambogia, Uganda, Nicaragua, Peru.	Survey.	689 migrants and residents.	Intertwined socio-political and climate vulnerabilities.	• Gradual and long-term environmental change (but not short-term and sudden) increased perception of conflict. • Economic conditions influenced migrants' conflict perception, whereas demographic variables had little impact. • Demographic variables exerted an impact on conflict perception: for example, female migrants perceived more socio-psychological conflict, and less political conflict.
Mallick, B., Priovashini, C., & Schanze, J. (2023).	'I can migrate, but why should I?' – voluntary non-migration despite creeping environmental risks. *Humanities and Social Science Communications*	Padmapukur, Chakdah, Nathpara, Vabanipur, and Panchakari, Bangladesh	Survey, interviews and focus groups.	195 (questionnaire) and 38 (interviews and focus groups) residents.	Intertwined socio-political and climate vulnerabilities	• Resilience is spatial, contextual, and temporal, and it is only one aspect that has an impact on the decision to migrate or stay. • The decision to stay was driven by livelihood factors and relied on aspirations based on household and community factors. • Most respondents experienced natural hazards from an early age and were used to cope with them.
Martin, M., Billah, M., Siddiqui, T., Abrar, C., Black, R. & Kniveton, D. (2014).	Climate-related migration in rural Bangladesh: a behavioural model. *Population and Environment*	Chapai Nawabganj, Satkhira, Munshiganj, Bangladesh.	Survey, focus groups, semi-structured interviews.	Not specified; migrants and key informants.	Intertwined socio-political and climate vulnerabilities.	• Migration decision-making was influenced by individual factors and social norms. • Migration was perceived as a way to offset the impact of climatic stresses by improving one's living. • Participants shown sense of control over their future by adopting adaptive strategies.

Marzouk, H. A., Duman, Y., Meier, J., Khudhur, Q. L., & Alani, O. (2022).	Assessment of perceptions of climate change and its causes and impacts on mental health and psychosocial wellbeing among a group of internally displaced persons in Iraq. *Intervention-International Journal of Mental Health and Psychosocial Work in Areas of Armed Conflict*	Duhok and Ninewa, Iraq.	Questionnaire with open and closed-ended questions	202 migrants.	Experiencing health-related challenges.	- Most respondents found that climate change impacted their life personally and that it was an important issue that needs to be addressed. - Climate change was seen as beyond one's control and collective/institutional actions, rather than individual, were considered as effective in addressing climate change. - Belief systems were essential to understand people's perception and feeling of self-efficacy to address climate change.
Oswald Spring, Ú. (2013).	Dual vulnerability among female household heads. *Acta Colombiana de Psicología*	Yautepec River Basin, Mexico.	Documents' analysis, quantitative survey, interviews, participant observations, workshops.	3955 migrants, residents and key informants.	Recognising dimensions of climate justice.	- Women impacted by dual vulnerability (social and environmental) became more susceptible to work overload and vulnerability to illness as household heads. - They were also more empowered as they became leaders of productive and educational activities and more involved in public activities. - The feminisation of agriculture and local public services allowed to recover eroded land and improved public services.
Pardhi, A., Jungari, S., Kale, P., & Bomble, P. (2020).	Migrant motherhood: Maternal and child health care utilization of forced migrants in Mumbai, Maharashtra, India.	Mumbai, India.	Semi-structured interviews.	15 migrants.	Experiencing health-related challenges.	- Forced female migrants experienced lack of basic sanitation, risk of food and water deprivation, shortage of space, causing greater risk of diseases for mothers and children. - They also faced difficulty in accessing healthcare services because of language and cultural differences.

	Children and Youth Services Review					• Migrants were supported by local organisations and NGOs. There was a lack of perceived support by governmental institutions.
Pucker, I., McCauley, M., Fox, K., & Jacobel, A. (2023).	Residents of Hawai'i's Climate Decisions to Remain or Migrate. *Journal of Ecopsychology*	Hawaii, US	Semi-structured interviews.	15 residents.	Loss of place and (sense of) community.	• Despite being aware of the risks of climate change, residents' attachment to the community and sense of rootedness prevented them from considering relocation. • Feeling supported by their communities, participants expressed responsibility and believed that volunteerism and other activities helped to promote "local resilience". • Participants believed they have the resources and skills to deal with future climate threats.
Rai, A. (2022)	Chasing the ghosts: stories of people left behind on the frontline of climate and ecological crisis. *South African Journal of Psychology*	Uttarakhand, India.	Interviews, ethnographic fieldwork.	75 migrants and residents.	Intertwined socio-political and climate vulnerabilities. Loss of place and (sense of) community.	• Transformation in land and its use impacted people's sense of belonging and sense of place, contributing to feelings of loss and helplessness. • It also affected collective life and traditions (e.g., many collective practices vanished or became more private).
Raoul, K. (2015).	Can glacial retreat lead to migration? A critical discussion of the impact of glacier shrinkage upon population mobility in the Bolivian Andes. *Population and Environment*	Bolivian Andes, Bolivia.	Semi-structured interviews.	54 migrants, residents and key informants.	Intertwined socio-political and climate vulnerabilities. Loss of place and (sense of) community.	• Glacial retreat did not directly influence migratory patterns but affected perceived sustainability of current livelihoods. • Landscape change conveyed the symbolic meaning of threat to the future of the residents' livelihoods. • Central factors in understanding the sensitivity of residents to water issues were the seasonality of water availability, its impact on the agricultural cycles, the governance of water distribution and the increasing water demand.

|						
Stanley, S. K., Ng Tseung-Wong, C., & Leviston, Z. (2022).	Welcoming climate refugees to the United States: Do attitudes depend on refugee origins, numbers, or permanence? *Journal of Environmental Psychology*	US.	Survey.	1765 respondents from general population.	Public attitudes towards climate-related migrants.	• Participants expressed support and sympathy towards refugees who are already living in their countries. • Support for internal climate refugees was higher compared to support towards international migrants. • Refugees coming from overseas were perceived more as threats, but this aspect was lessened when refugees came from Pacific/Oceania, Asia or Europe. • The support for resettling was not affected by variables such as numbers or the permanence of migration.
Tschakert, P., Tutu, R., & Alcaro, A. (2013).	Embodied experiences of environmental and climatic changes in landscapes of everyday life in Ghana. *Emotion, Space and Society*	Accra and Northern and Upper West Regions, Ghana.	Semi-structured and in-depth interviews, visits, participatory mapping.	63 migrants, 26 key informants.	Intertwined socio-political and climate vulnerabilities. Recognising dimensions of climate justice.	• Slow social-ecological transformations were perceived as major drivers of migration. • For those who did not migrate, the drying up of water sources, failing agriculture, loss of scenic beauty and declining social networks triggered feelings of sadness, fear, anger, disappointment, loss, and helplessness.
Whitley, C. T., Rivers III, L., Mattes, S., Marquart-Pyatt, S. T., Ligmann-Zielinska, A., Olabisi, L. S., & Du, J. (2018).	Climate-induced migration: using mental models to explore aggregate and individual decision-making. *Journal of Risk Research*	California, US	In-depth interviews	11 migrants.	Intertwined socio-political and climate vulnerabilities.	• Decisions to migrate were case and location specific, especially for communities at risk and lacking resources to deal with climate change. • Marginalised communities who migrate were often perceived as potential economic stressors. • Participants mentioned negative reactions, racial tensions and discrimination from the general population.
Willett, J., & Sears, J. (2020).	Complicating our understanding of environmental	Kenya.	Interviews, ethnographic observations.	Not specified.	Intertwined socio-political and climate vulnerabilities.	• Environmental changes were only one of many migration drivers, such as poverty, lack of

	migration and displacement: The case of drought-related human movement in Kenya. *International Social Work*				Recognising dimensions of climate justice.	alternatives, individual desires and (lack of) government responses. ● A migratory rural-urban pattern, even for transitory periods, was considered a normal phenomenon among the community. ● Individual characteristics such as gender, age, class, caste, ethnicity, health, education, labour skills, and language influenced the decision to migrate.
Wolsko, C., & Marino, E. (2016).	Disasters, migrations, and the unintended consequences of urbanization: What's the harm in getting out of harm's way? *Population and Environment*	Shishmaref, Alaska	Ethnographic observation, interviews, surveys, document analysis	Not specified.	Intertwined socio-political and climate vulnerabilities. Loss of place and (sense of) community.	● Residents faced extreme weather events, flooding, and a lack of commitment from state and federal governments and consequent stress and concern. ● The possibility of staying in their territory was preferred to have to relocate the entire community in an urban environment.
Yates, O. E. T., Groot, S., Manuela, S., & Neef, A. (2023).	"There's so much more to that sinking island!" – Restoring migration from Kiribati and Tuvalu to Aotearoa New Zealand. *Journal of Community Psychology*	New Zealand	Talanoa methodology (e.g., open dialogue with community members)	38 migrants from Kiribati and Tuvaluan.	Loss of place and (sense of) community. Recognising dimensions of climate justice.	● Climate mobility was seen as a recursive, ever-evolving journey, and the communities were affectively oriented towards home. ● Kiribati and Tuvaluan communities provided social support, including childcare, food parcels, financial assistance, and emotional support. ● Participants used a range of adaptive strategies to reinforce their cultural identities, such as bilingual children's books and online communities.

Most sources were published in interdisciplinary journals (e.g., Population and Environment). A few articles were published in generic psychology journals (e.g., Acta Colombiana de Psicología; South African Journal of Psychology) and sub-field journals (Journal of Environmental Psychology; Journal of Community Psychology). Although we did not apply a date range criterion, all studies included in the review were published in the last decade (from 2013 to 2023), suggesting an increasing interest in the topic (Figure 2).
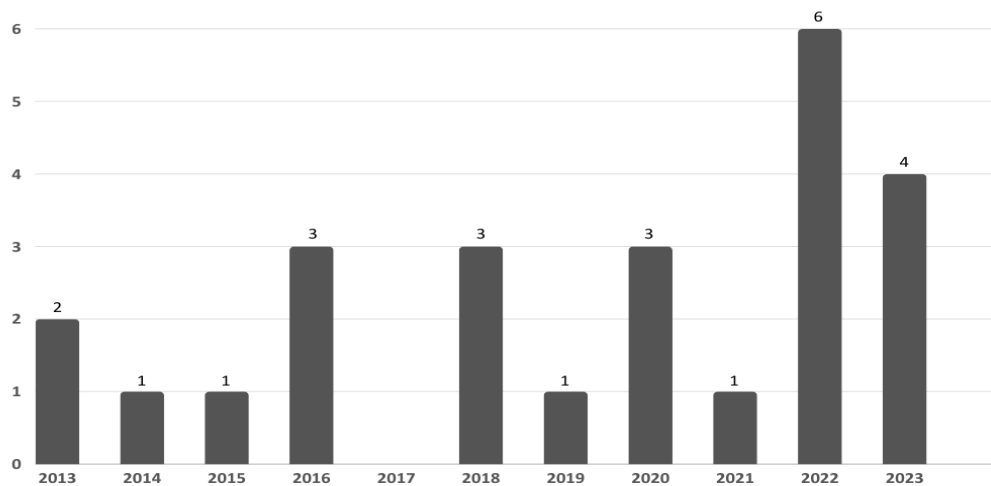
Figure 2. Articles by year of publication

In terms of the geographic distribution of the sources analysed in this review, several studies were conducted in countries highly affected by climate change (Chancel et al., 2023), as can be seen in the map presented below (see Figure 3). Bangladesh was represented in six studies. Ghana and India were both represented in two studies. Several countries were represented with only one paper, namely Bolivia, Indonesia, Iraq, Kenya, Mexico, New Zealand, and Tanzania. Two of the four articles conducted in the US territory focused on areas highly affected by climate change, such as the Hawaiian Islands (Pucker et al., 2023) and the Shishmaref – a small coastal Alaskan village (Wolsko & Marino, 2016). A few studies collected data in more than one country. Arias and Blair (2022) collected data in the U.S. and Germany, and Koubi et al. (2018) in Vietnam, Cambodia, Uganda, Nicaragua, and Peru.
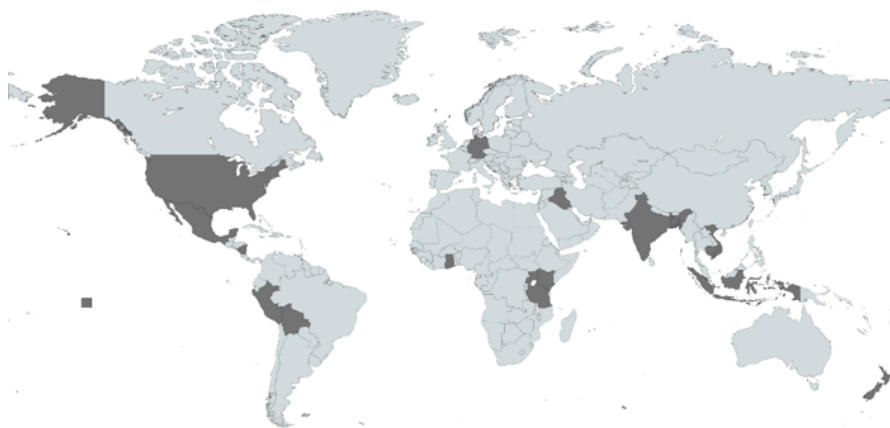
Figure 3. Geographical distribution of the studies

3.1   Theoretical and methodological approaches

Several theoretical frameworks were mentioned in the articles analysed, including: the humanitarian model of migration attitudes (Arias & Blair, 2022); Homer-Dixon's eco-scarcity theory (Issifu et al., 2022); Andersen and Leventhal's healthcare-seeking behaviour model (Haque et al., 2019; Heaney & Winter, 2016); the behavioural approach to migration decision-making (Adams, 2016); the cognitive approach to migration decision-making (Martin et al., 2014); Lee's theory of migration and the Lens model of decision-making (Whitley et al., 2018); the model of migration adaptation to rainfall change (Martin et al., 2014); and, resilience theory (Mallick et al., 2023; Pucker et al., 2023). Two studies mentioned mental health and well-being approaches (Burrows et al., 2021; Marzouk et al., 2022).

Furthermore, several authors conceptualised their studies focusing on theories of place attachment, place identity, and sense of place (Blakeman et al., 2023; Mallick et al., 2023; Pucker et al., 2023; Rai, 2022). Two articles in the review referred to classic concepts within the field of social psychology, such as ingroup/outgroup and intergroup dynamics, contact hypothesis (Stanley et al., 2022) and social identity theory (Pucker et al., 2023; Stanley et al., 2022). Other theoretical concepts mentioned were "solastalgia", used to refer to the distress resulting from the experience of environmental change (Pucker et al., 2023; Tschakert et al., 2013); kinship, to describe how humans are part of nature (Pucker et al., 2023); and conflict perception (Koubi et al., 2018). Only a few studies used critical frameworks, such as the discursive approach to the decision-making model (Ayeb-Karlsson et al., 2020), a transdisciplinary framework (Blakeman et al., 2023), or a dignity framework for mobility inspired by Pacific psychologies, critical community psychology and social justice framework (Yates et al., 2023).

To identify methodological trends in the literature, we noted the methodological approaches (quantitative, qualitative, or mixed methods) and the data collection techniques used (e.g., interviews, focus groups). In total, 14 studies adopted a qualitative approach, four used quantitative methods, and seven combined qualitative and quantitative approaches. Most mixed-methods studies involved surveys with closed and open-ended questions. A few articles combined data collected from human participants with analysis of documents, reports, newspapers or governmental statistics (e.g., Issifu et al., 2022; Wolsko & Marino, 2016). Only a few studies used participatory approaches, such as community and participatory mapping (e.g., Tschakert et al., 2013). Yates et al. (2023) applied the Talanoa methodology – a methodology embedded in Pacific values – and conducted several group discussions.

### 3.2   Participants and demographics

Regarding the type of migration, 14 studies focused solely on internal migrants, with most research conducted in countries or regions highly affected by climate change located in the hemispheric South (Chancel et al., 2023). Only two studies looked at the perspective of international migrants (Whitley et al., 2018; Yates et al., 2023), and three included both internal and international migrants (Arias & Blair, 2022; Issifu et al., 2022; Oswald Spring, 2013). Stanley et al. (2022) addressed both internal and international migrants but focused on the public's attitudes towards different types of migrants rather than on migrants' lived experience of climate-related migration.

Furthermore, by focusing on the decision-making processes around migration due to environmental and climate risks, four studies highlighted the need to consider both climate mobility and immobility (Adams, 2016; Ayeb-Karlsson et al., 2020; Mallick et al., 2023; Pucker et

al., 2023). Thus, communities that did not migrate but were affected by climate change were also included in some studies. Overall, participants involved in the different studies analysed (see Fig 4) were mainly people who migrated, either internally or internationally (e.g., Hossain et al., 2022; Raoul, 2015); residents (people affected by the impacts of climate change who were about to/wanted to migrate, or stayers, who did not want or could migrate (e.g., Blakeman et al., 2023; Burrows et al., 2021); workers and key informants such as community leaders (Islam, 2018; Martin et al., 2014;); and the general population (Arias & Blair, 2022; Stanley et al., 2022).
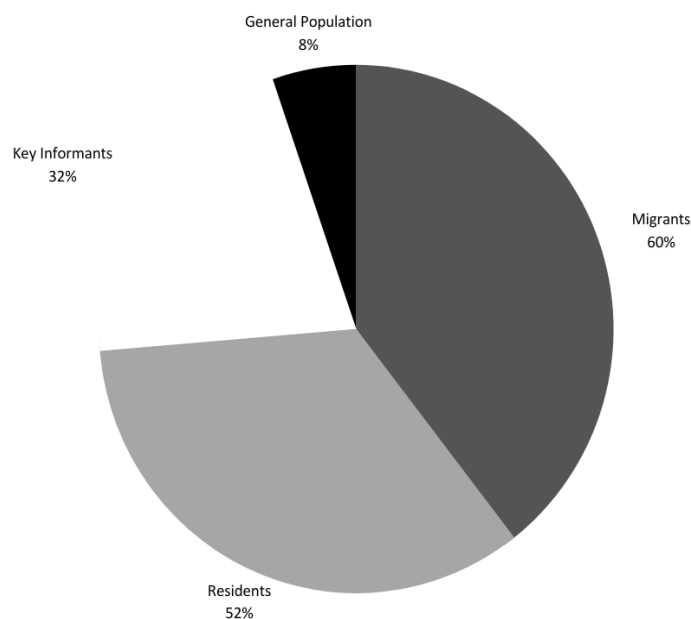
Fig 4. Profile of the participants

In terms of the type of sampling, most studies used convenience/purposive sampling, including snowball sampling (e.g., Marzouk et al., 2022; Pucker et al., 2023). Other types of sampling mentioned were random sampling (e.g., Hossain et al., 2022), systematic sampling (e.g., Haque et al., 2019) and stratified cluster sampling (Islam, 2018). A few articles did not specify the sampling strategy used (e.g., Martin et al., 2014; Willett & Sears, 2020).

3.3   Narrative synthesis: An overview of the main qualitative findings

In the next section, we describe the findings of the narrative synthesis organised into five themes. The first theme, "Intertwined socio-political and climate vulnerabilities", covers 12 studies addressing the multiple and interconnected socio-political dimensions that influence the decision to migrate in the face of climate vulnerability. The second theme, "Loss of place and (sense of) community", appears in nine articles and refers to how dimensions related to place identity and attachment, and sense of community are represented in the existing literature. The third theme, "Recognising dimensions of climate justice", was prevalent in seven articles and summarises the climate justice dimensions identified by these studies. The fourth theme, "Experiencing health-related challenges", examines six studies addressing health challenges faced by climate-related migrants. Finally, the fifth theme discusses two studies focusing on the general population and their "Public attitudes towards climate migrants".

3.3.1 Intertwined socio-political and climate vulnerabilities

Articles included in this review examined a range of climate change impacts that influence migration, including glacial retreat (e.g., Raoul, 2015), drought and desertification (e.g., Heaney & Winter, 2016; Marzouk et al., 2022), the shifting trend of temperature, rainfall, and sea level rise (e.g., Hossain et al., 2022), flooding (e.g., Martin et al., 2014), landslides and tsunamis (e.g., Burrows et al., 2021). Thus, both short-term (e.g., flood, storms, wildfire) and long-term (e.g., droughts and sea-level rise) effects of climate change are considered as contributing factors to migration within and across countries (Ayeb-Karlsson et al., 2020; Koubi et al., 2018; Stanley et al., 2022). Still, extreme weather events (e.g., hurricanes, wildfires, floods) are more often associated with climate-related migration (Mallick et al., 2023). Contrariwise, in the face of long-term environmental degradation and climate impacts, migration may not be perceived as directly related to the effects of climate change. In the case of a drought in Kenya, for example, migration was considered as a "normal movement pattern" (Willett & Sears, 2020; p. 365) that communities rely upon when necessary.

While migration is often framed as one of the devastating consequences of climate change (Hossain et al., 2022; Yates et al., 2023), climate-related migration needs to be interpreted considering a set of complex and intertwined factors (e.g., social, economic, demographic, and political) that shape and influence people's decision to stay or to leave their places and communities (Martin et al., 2014; Raoul, 2015; Wolsko & Marino, 2016). Climate impacts exacerbate existing vulnerabilities and affect people's lives and livelihoods (Mallick et al., 2023; Rai, 2022), but it is the lack of socioeconomic conditions that often triggers the decision to migrate (Adams, 2016). For example, Tschakert et al. (2013) show that climate-related events threaten people's well-being, leading to a lack of income, conflict and chaos, poor crop yields and insufficient food. Ultimately, it is the lack of income, the loss of access to fertile lands, and the absence of jobs that lead to the decision to migrate (Tschakert et al., 2013). Whitley et al. (2018) examined historical interviews about the Dust Bowl migration – which was prompted by a prolonged period of drought experienced in the United States accompanied by severe sandstorms in the 1940s –, concluding that migration was a complex and progressive decision-making process, where the exposure to the extreme weather event (i.e., drought) was only one of many variables influencing people's decision to leave. For example, compared to those who did not migrate, migrants tended to have higher social connections in other regions of the country (Whitley et al., 2018). Likewise, Islam's (2018) study focused on the decision to migrate among the Char Land People in Bangladesh, concluding that climate-related changes and hazards (e.g., flood, river erosion), along with economic and social vulnerabilities (e.g., lack of education and medical care, lack of employment), affected participants' decision to migrate. Reasons explaining people's migration decisions included both climate threats (e.g., river erosion, flood) and economic and social vulnerabilities (e.g., lack of employment, food insecurity, debt) (Islam, 2018).

A few articles also highlighted the relationship between climate change impacts and socio-political conflicts. For example, Issifu et al. (2022) focused on the relationship between climate change, migration, and conflicts in Ghana, concluding that environmental scarcity and the competition for water were related to farmer–herder conflicts. Additionally, Koubi et al. (2018) explored how previous exposure to extreme weather events shapes climate migrants' conflict perceptions of different areas, including those related to political conflict, social challenges, environmental stress, and economic hardship. Based on survey data from five countries (i.e., Vietnam, Cambodia, Uganda, Nicaragua, and Peru), this study shows that gradual and long-term environmental change, such as droughts or desertification, influences individual-level conflict perceptions, while sudden and short-term environmental change does not seem to impact

migrants' conflict perceptions (Koubi et al., 2018). Overall, these studies tend to describe migration as an adaptation strategy to deal with local climate threats (e.g., Issifu et al., 2022). Migration is considered an option when people perceive they could make a better living elsewhere and contribute to support and build resilience in their places of origin, for example, by sending remittances (Martin et al., 2014). Some people, however, do not have the resources to rely on migration as an adaptative strategy. A recent study showed that after an extreme weather event (i.e., cyclone), people wanted to migrate but did not know where they could go and feared uncertainty and risks associated with mobility (Mallick et al., 2023). For these latter, other factors seemed to have influenced the decision to stay or to migrate despite the high climate vulnerability (Mallick et al., 2023).

3.3.2 Loss of place and (sense of) community

Besides all the material and economic impacts, climate change transforms the physical characteristics of places and impacts people's place identity, social ties, social connections, and traditions. Raoul (2015) focused on glacial retreats in the Bolivian Andes, concluding that their disappearance impacted local people's livelihoods and their sense of place and belonging. Likewise, Rai (2022) focused on the lived experience of people impacted by environmental change in one of India's most climatically vulnerable states (Uttarakhand) by interviewing both people who decided to stay and those who decided to migrate. The results suggested that climate change profoundly affected the local social life and people's ties with the place, causing a significant disruption of collective life, culture, traditions, and everyday practices.

Place attachment seems to be an important dimension to consider as it plays a key role in people's decisions to stay or to migrate regardless of the experiences of climate vulnerability. Adams' (2016) study focuses on the decision to migrate among communities that were experiencing effects of climate change. The author describes low mobility potential as depending on positive place attachment, negative place attachment in the form of obligation, and fear/disinterest in other locations (Adams, 2016). The results suggested that while people perceive the negative impacts of environmental change, their decision to migrate is mostly influenced by place satisfaction and attachment. Similarly, Pucker et al. (2023) demonstrated the importance of a sense of place and connection in deciding whether to stay or move among residents in the Hawaiian Islands. The lack of intention to migrate was explained by a sense of place and high levels of place attachment, despite the feelings of uncertainty and fear regarding the consequences of climate change and the recognition of several ways their communities had changed (e.g., social, ecological, financial, and structural changes) due to climate change. Interestingly, sense of place and belonging coexisted with a lack of faith, trust and anger toward institutions and society (Pucker et al., 2023).

The role of place in climate-related migration is particularly significant for planning relocation. Hossain et al. (2022) focused on the impact of climate change on the lives, livelihoods and adaptation practices of riverine island dwellers in Bangladesh. Their study demonstrates that displaced people suffered social consequences in their new locations. Alongside its economic implications (e.g., income loss, scarcity of food, fewer education opportunities), relocation entailed also a deterioration of social networks (Hossain et al., 2022). In their study with Shishmaref survivors of climate-related disasters, Wolsko and Marino (2016) found that residents expressed several concerns over the relocation related to disconnection from nature. Interestingly, it was found that residents discussed immediate risks of climate change (e.g., flooding) less frequently than the long-term psychological and cultural ramifications of relocating

the entire community out of their territory and into a more urban environment (Wolsko & Marino, 2016). Additionally, there was a strong sense that the community needed to maintain social cohesion and cultural vitality (Wolsko & Marino, 2016).

Moreover, it has been suggested that relocation processes should be community-led to ensure the preservation of social cohesion in the community (Burrows et al., 2021). In the face of multiple climate obstacles and adversities, affected communities tend to provide support and shelter collectively (Yates et al., 2023). Thus, it should be ensured that these pre-existing forms of support and belonging are not lost during the relocation process (Yates et al., 2023). Another study addressed these issues by focusing on the planned resettlement of the Isle de Jean Charles, U.S. (Blakeman et al., 2023) and describing the process of bringing together diverse practitioners and Island residents to make decisions concerning the resettlement. Sense of place and attachment were recognised as fundamental elements towards a just retreat (Blakeman et al., 2023).

3.3.3 Recognising dimensions of climate justice

The frame of climate change as intertwined with social, economic and political issues suggests that scholars acknowledge social injustices and inequalities dimensions involved in climate change. A climate justice framework is, however, often not explicitly mentioned or discussed. For example, Willett and Sears (2020) focused on the migration of groups particularly vulnerable to climate change, but they did not explicitly frame climate change as a climate justice issue. Yates et al. (2023), instead, explicitly assumed a social justice approach in their research. By applying a "migration with dignity" framework to investigate Kiribati and Tuvaluan people's migration journeys to New Zealand, the authors discussed how these communities face multiple obstacles and socio-political barriers to their well-being (Yates et al., 2023). Their study clearly exemplifies how borders can amplify pre-existing economic and cultural precarity, compromising people's well-being, identities, cultures, and languages. The authors also suggested the need to ensure people's basic needs (e.g., autonomy, food, water, healthcare and social support) in each step of the migration journey.

The procedural justice dimension of climate justice (e.g., related to the power to influence adaptation decisions; Holland, 2017) was the focus of the recent study by Blakeman and colleagues (2023). The authors described a participatory planned resettlement process to encourage social justice for communities facing relocation due to the impacts of climate change (Blakeman et al., 2023). Additionally, a few studies discuss the concept of "trapped populations", highlighting the need to look at existing resources to migrate despite the climate vulnerabilities. The concept of "trapped populations" is, however, contested by several articles included in this systematic review, as other reasons beyond climate and socio-political vulnerabilities, such as place attachment (e.g., Adams, 2016), influence people's decision to stay or migrate (e.g., Ayeb-Karlsson et al., 2020). Besides, the concept of "trapped populations" promotes a passive representation of the people involved in these processes.

Finally, a few studies also examined the gendered dimension of (non) migration in contexts of climate threats and vulnerability (e.g., Oswald Spring, 2013), concluding that gender-related dimensions are likely to influence each step of the migration journey. It was found that younger men migrate more often than women and the elderly (Willett & Sears, 2020) because of droughts and loss of livelihood (Heaney & Winter, 2016). Compared with men, women were found to migrate more often due to economic reasons (e.g., male providers died or became unable to work) (Heaney & Winter, 2016) and with less planning or preparation (Tschakert et al., 2013). Besides, as we will discuss below, gender was also addressed in some of the studies focusing on access to health services (e.g., Pardhi et al., 2020).

3.3.4 Experiencing health-related challenges

Some studies included in our review suggest that climate change and climate migration are both associated with health impacts. Climate migrants were found to struggle with mental health issues like stress, unhappiness, and loneliness and these impacts were perceived to relate to feelings of being trapped and hopeless, lacking social support, and feeling homesick (Heaney & Winter, 2016). Marzouk et al. (2022), focusing on a group of internally displaced persons in Iraq, concluded that most participants knew about and were interested in climate change and had felt climate change impacts personally (e.g., health-related physical problems, socio-economic issues, and weather conditions). This study also suggests that the more affected by hot weather, the higher the impact on psychosocial variables (e.g., ability to concentrate on tasks, level of irritability, ability to socialise, level of anxiety, sleep levels, mood status) and well-being (Marzouk et al., 2022). Additionally, Burrows et al. (2021) conducted a qualitative study to understand how people in Indonesia experienced mental health impacts of landslide displacement. Their study shows that participants' livelihoods and their connection to the land and the local community were deeply intertwined with their well-being over time. Indeed, the impact of landslides significantly affected people's mental health, including in the immediate aftermath when they experienced profound grief; during the transitional period, which was characterised by changes in interpersonal relationships; and after the relocation, which involved several challenges related to the loss of livelihoods and associated impacts on sense of self and place. Thus, experiences of grief may change over time, but they do not disappear after people's permanent relocation (Burrows et al., 2021).

Ayeb-Karlsson et al. (2020) focused on socio-psychological immobility and its link with the well-being of internally displaced people from Bhola Island living in a slum in Dhaka, Bangladesh. The study combined Q-methodology and discourse analysis and identified five main discourses among participants: 1) "The Landless: I want to return, but the erosion took my land"; 2) "The Displaced: This is not where I belong, I want to go home"; 3) "The Sacrificed: Lost health and honour for economic gain"; 4) "The Returners: I came here to save up money, after that I will return home"; 5) "The Dreamers: Urban dreams of betterment" (p.7). Such diversity of discourses suggested that the decision to stay or to leave is complex and that while some participants wanted to return home to Bhola Island, others wanted to move to another place and saw their mobility as permanent. Nevertheless, mobility was perceived as restricted due to the lack of financial resources and poor physical health and well-being.

A few studies focused on differences and challenges in accessing health among displaced people. For example, Pardhi et al. (2020) focused on the health-seeking behaviour of pregnant displaced women who were forced to move from the Marathwada region in India to bigger cities. Overall, the study shows that pregnant women and children are at greater risk of diseases at the place of destination, and this was related to barriers faced in health-seeking behaviour. Women experienced barriers in accessing maternal healthcare services related to language and cultural differences and believed that there was a lack of institutional will to address their needs (Pardhi et al., 2020). This study demonstrated that climate change-related challenges leading to migration continue after the migration process itself, and culturally sensitive services to address the needs of migrant communities are urgently needed. Likewise, Haque et al. (2019) demonstrated that parents in Bangladesh who have survived displacement linked to floods and riverbank erosion experienced reduced healthcare options, which had long-term effects on their healthcare-seeking behaviours for their children's illnesses. Additionally, this study also shows that compared with

non-displaced parents, displaced parents were less likely to seek health services for their children (Haque et al., 2019). The authors concluded that displaced parents in Bangladesh face a range of other socioeconomic disadvantages (e.g., lack of availability of untrained and trained care providers within a 1 km radius of the household), which act as constraints for their responses to the illness of their children (Haque et al., 2019). Thus, increasing the availability of services and support may help to facilitate access to health – as a fundamental right – for those on the move.

3.3.5 Public attitudes towards climate-related migrants

Taking a quantitative approach, two studies focused on the perspectives of the general population and examined public attitudes towards climate migrants. Arias and Blair (2022) conducted an experimental study focusing on public attitudes towards climate migration in a sample from the U.S. and Germany. Their findings suggest that while people were more supportive of hosting climate migrants than economic migrants, they were less supportive of climate migrants when compared to refugees. People's support of migrants was influenced by several dimensions such as migrants' employment (e.g., doctor, cleaner), language fluency, religion (e.g., Christian, Muslim), and perception of vulnerability (e.g., food insecurity, physically handicapped, no surviving facility members, post-traumatic stress disorder). Additionally, public attitudes toward migration were influenced by the reasons why people migrate (e.g., flooding, drought, wildfires, political/religious/ethnic persecution), with similar results for internal and international migrants. Likewise, Stanley et al. (2022) focused on public attitudes towards climate refugees in the United States, demonstrating that policy support and support for dedicating resources to resettling and prioritising migration policy were lowest for international climate refugees when compared to internal climate refugees and refugees of war. Results suggested that people tend to support more internal than international migrants, there is low public awareness about climate-driven migration and a tendency to support those refugee groups already residing in their country (refugees of war and internal climate refugees). Also, international climate-related migrants were perceived as posing more symbolic and realistic threats compared to US people internally displaced due to climate change.

These studies seem to present slightly different findings when comparing how people support internal and international migrants. While Arias and Blair (2022) suggested no differences when considering attitudes towards internal or international climate migrants, Stanley et al. (2022) found that people tend to show more support towards internal climate refugees. They seem, however, to be consistent in suggesting that people tend to value certain reasons more than others instead of viewing migrants as human beings who need/want to migrate regardless of the reason (Arias & Blair, 2022).

4.   Discussion

With this review, we aimed to examine existing socio-psychological perspectives, looking at the topics covered, the methods used, the geographical distribution of the research, and how climate-related migration is being framed. We were also interested in understanding how climate justice is framed in this body of scholarship.

Our findings suggest that despite an increasing number of publications on the topic, there is still a lack of interest, particularly from a critical perspective. In total, 25 sources were included in the review, and from these, few studies have been published in psychology journals. One possible explanation for the lack of studies in psychology journals is that climate migration is fundamentally

an interdisciplinary topic. Overall, however, there is still an overall lack of empirical focus on the topic despite the multiple calls from scholars (e.g., Borderon et al., 2019) and psychological societies (e.g., Steinebach, 2023). In terms of approaches, the studies included in our review bring concepts from a range of fields and disciplines. Still, only a few were grounded in critical and climate justice frameworks. Additionally, despite the diversity of methods used, critical and participatory methodologies were rarely adopted. More studies, such as the one conducted by Yates et al. (2023), are needed to understand how migrant communities are experiencing climate change mobility, and to bring their voices to the centre of research. It is important to highlight, however, that all the articles included in the review were published since 2013, with 2022 representing the year with a higher number of publications, which may reflect an increasing interest in the topic.

Geographically speaking, many countries were not represented in this review, including several African countries that are disproportionately affected by climate change and are already hosting many climate-related migrants (IPCC, 2023; Smirnov et al., 2022). Most studies focused on internal migrants, suggesting a lack of attention to international climate-related migrants. There is also an overall lack of studies conducted in European countries. The results from the two studies addressing public attitudes towards climate migrants (Arias & Blair, 2022; Stanley et al., 2022) suggest a lack of a comprehensive view from the public of the reasons why people may or may not migrate, which we argue may lead to a lack of acceptance and support of migrants' communities. Considering the multiple forms of violence and oppression faced by people on the move at the European borders (Esposito et al., 2023; Esposito & Kellezi, 2020) and the increasing visibility of anti-immigration discourses in European countries (Fernandes-Jesus et al., 2022; Garcia-Jaramillo et al., 2023), there is a pressing need to examine discourses and representations of climate-related migration from the perspective of the general population. Policy discourses about climate-related migration in European countries could be useful to understand how this specific issue is being treated (or not) at the policy level. Ultimately, research should seek to contribute to the development of more inclusive and just migration policies.

Climate-related migration is influenced by many intertwined factors. The studies included in this review clearly suggest that climate impacts exacerbate existing socio-political vulnerabilities affecting people's lives and livelihoods (e.g., Mallick et al., 2023; Rai, 2022). Thus, it is extremely difficult to isolate climate change from other structural issues that affect people and communities, which suggests that existing categories associated with the motives why people migrate may be arbitrary and/or difficult to isolate. Likewise, the distinction between climate and non-climate-related migration may not represent the experiences of people or their motives and desires to migrate. Such evidence, in line with critical migration scholarship (e.g., Bakewell, 2021), challenges the divide between "forced" and "voluntary" migration reproduced in much literature and ultimately questions its analytical validity. Additionally, as also revealed in the review, even in the face of extreme climate change effects, people have some degree of agency in choosing whether they want to migrate or not. While we recognise these limitations in conceptualising climate-related migration, we also argue that it is crucial to acknowledge how climate change is related to displacement and relocation processes and how people's agency is often constrained by oppressive and unequal social structures that must be questioned, confronted, and changed. Among these, we underlined the role of gender constructions in these processes, therefore advocating for intersectional perspectives in addressing climate-related migration.

Climate-related migration raises complex issues related to climate justice (Sultana, 2021), and there is a pressing need to address the many forms of climate injustice faced by migrant communities. We argue that one way to contribute to climate justice is to support and develop

migration policies that treat all migrants with respect and dignity and that recognise their political agency. There are many things that could be done to ensure that affected communities are respected and treated with dignity and that their rights are recognised in the design and development of adaptation policies. For example, it is crucial to place marginalised communities at the centre of the decision-making processes (Esposito & Kellezi, 2020; Fernandes-Jesus et al., 2020), including in the development of policies for addressing climate-related migration, interventions to help and support these communities and research around the topic. Likewise, it is fundamental to create structures that facilitate access to fundamental rights, including those related to housing, education, social support, and health. Regarding mental health related issues – and considering that migrant communities in general tend to face many mental health challenges (Kirmayer et al., 2011) – we argue that more support should be provided to all migrants regardless of the reasons for migration. Additionally, any relocation process should be prepared to ensure that pre-existing forms of support and belonging are valued, and that communities and their desires are placed at the centre of any decision-making process (Burrows et al., 2021; Hossain et al., 2022; Wolsko & Marino, 2016).

Importantly, the studies in our review clearly demonstrated the importance of looking at dimensions related to place and belonging (e.g., Adams, 2016; Pucker et al., 2023). Place attachment and sense of community were found to be key dimensions in promoting a just relocation and adaptation process in the face of climate change. While the examined studies lack information about the impact of the size (e.g., village vs country) and the type (rural vs urban) of the community on the decision to stay or migrate – aspects that are relevant to the understanding of people's perception of climate change (e.g., Morales-Giner & Gedik, 2022; Tenbrink & Willcock, 2023) – they clearly highlight the importance of place dimensions and sense of community. Considering that these dimensions are often ignored in migration studies and considered minimally in climate-related migration studies, these findings are quite promising. The 'community' is an essential resource in facilitating the adaptation process while maintaining people's well-being, and the role of place in climate-related migration is particularly relevant for planning the relocation of entire communities affected by climate change (Hossain et al., 2022). The ability to keep community-based relationships is crucial for the process of adapting to a new place, as there are long-term psychological implications of relocating entire communities (Wolsko & Marino, 2016). Overall, these studies suggest the importance of looking at climate-related migration (and other forms of climate injustices) from a community-based perspective and to recognise communities' right to be involved in any decision-making process that affects their community, including any mitigation or adaptation policy. In other words, "Nothing About Us Without Us" (Charlton, 1998) should also be the leading principle in this area.

4.1. Limitations and strengths

There are several limitations in this review that need to be acknowledged. As we only searched for literature using the keywords in English, research published in other languages, such as Spanish, French, or Portuguese, may not have been identified. Nevertheless, it is worth noting that we did not constrain our searches to English keywords, and besides English, the authors of this review can read Portuguese, Italian, French and Spanish. Because most journals in those languages have abstracts and keywords in English, we expected that existing articles would be identified by our searchers. With a few exceptions that were not aligned with our inclusion criteria, no relevant sources were identified. We also did not include grey literature, which is likely to have contributed to excluding relevant sources developed by governmental and non-governmental organisations. Unfortunately, as this work was not funded, we lacked the capacity to search and examine those

documents. We were also interested in peer-reviewed empirical research, which is less commonly found in grey literature. It is also important to note that the searches were conducted over a longer period than expected, and for this reason, we have updated the database search and selection in June 2023, as described in the methods section.

Despite these limitations, we believe our review has several strengths. To our knowledge, this is the first systematic review focusing on socio-psychological perspectives in climate migration. No date range were applied in the database search, and therefore, all relevant literature that matched our inclusion criteria was screened. Furthermore, we used multiple databases and included both qualitative, quantitative and mixed-methods articles. We also looked at several dimensions of the published articles, including the geographical distribution of the studies, the content covered (i.e., what topics are addressed), and methods used in the existing literature. Lastly, by pointing out the research gaps on this topic within our field, we were able to identify a set of recommendations for future research.

4.2. Towards a research agenda: Avenues for future research

By highlighting the socio-psychological dimensions of climate-related migration addressed in the literature, how they are addressed, and the gaps in existing research, this review can offer insights for future research addressing climate migration. Specifically, we would like to propose five complementary possible avenues for future research.

First, following several calls by critical scholars in the field of climate justice (Amorim-Maia et al., 2022; Mikulewicz et al., 2023; Sultana, 2021, 2022), we argue that future research examining the climate-migration nexus from a socio-psychological perspective should take an intersectional theoretical approach. Such an approach may involve acknowledging and examining how multiple categories (e.g., gender, race, class, ability) may interconnect and overlap to influence how people experience their migration journey. Essentially, it implies developing research projects examining the multiple and diverse experiences of climate mobility while recognising that "vulnerable [to climate change] communities are not homogenous" (Sultana, 2022; p. 120). We have pointed out the relevance of the gender to understand different experiences of climate-related migration, but there are other categories that should be considered, such as age, disability, ethnicity, class, etc. Adopting an intersectional perspective in studying climate-related migration would allow the recognition of people's different needs, desires and rights and may help to contribute to disrupting power relations and the social structures leading to marginalisation and oppression (Mikulewicz et al., 2023; Newell et al., 2021; Sultana, 2021, 2022). Such an approach requires acknowledging the multiplicity of complex and intertwined dimensions that influence the decision to migrate in the face of climate vulnerabilities. It is then necessary to develop research that recognises and gives voice to the multiple and diverse experiences of people and communities, considering the multiple social, economic and political dimensions that shape how they experience the impacts of climate change.

Second, in our review, only two articles focused on the perspectives of the general population, which suggests a research gap in public attitudes and social representations of climate migrants as well as on the social factors that may facilitate the integration of climate-related migrants. The continued hostility towards immigrants (e.g., Griffiths & Trebilcock, 2022; Rebelo et al., 2020), particularly towards those who are from countries in the Global South (Schmidt, 2021), suggests that it is crucial to focus on both – migrants and host communities. Such requires, for example, recognising that the decision to stay or to migrate may be influenced by historical relations, language, sense of place, cultural aspects and perceived challenges associated with migration and

integration in hosting communities. Likewise, it is worth examining how current and potential host communities perceive climate-related migrants in different contexts and what factors may facilitate more positive social representations and more inclusive migrant policies. Understanding these multiple dimensions that contribute to migration may also help in building solidarity towards communities on the move, regardless of the perceived reasons leading to their migration. Furthermore, research involving the design and intervention among the general population may be particularly important to identify strategies to facilitate a comprehensive view of climate-related migration. In this process, it is key to consider how people categorise climate-related migrant groups and communities, how these categories are constructed in the media and policy documents, and how they can be challenged and contested. Studies focusing on how and in which conditions solidarity and allyship towards (climate-related) migrants may contribute to deconstructing the multiple inconsistent and often arbitrary representations of people on the move. In this sense, the perspectives of groups who have resettled, including those who moved for reasons other than climate change, are particularly important, as well as those of activist groups engaged in climate and migrant justice work.

A third line of research particularly relevant to community psychologists relates to procedural justice in climate-related migration research. Compared to other dimensions of climate justice (such as recognitional or restorative), procedural justice is more often addressed in the climate change literature (Juhola et al., 2022). Thus, it was surprising to see a lack of research addressing the participation and inclusion of migrants in decision-making processes. Such studies are necessary to ensure that we put migrant communities at the heart of the decisions that affect their lives before, during, and after any relocation processes. Within this line, we argue that studies looking at how and in which conditions migrant communities engage in climate change policies are particularly needed. This may involve looking at processes of participation and decision-making from the perspective of migrant communities and looking at the related barriers and facilitators of their engagement. An intersectional lens is crucial to ensure that we do not overlook existing power relations and social structures that may constrain the political engagement with climate change of certain climate-related migrant groups (e.g., women, youth, etc.).

Fourth, while some studies included in the review recognised that there is always some level of agency involved in the decision to migrate, there is still a lack of research focusing on how agency and resistance are experienced by communities affected by climate change and climate-related migration. For example, future research could look at how and in which conditions migrants engage with climate change, how they resist the multiple oppressions they face, and how we can support their struggles towards both migrant justice and climate justice. Studies could also look at the perspectives of those who have experienced adverse climate events (e.g., floods) and how such lived experiences may contribute (or not) to developing more inclusive views of social justice and solidarity. Considering the importance of the bonds with our places and communities in the decision to stay or migrate (Adams, 2016; Pucker et al., 2023), future research should explore how different scales and types of communities may be related to climate migration.

Fifth, from a methodological perspective, we argue that more critical and participatory approaches should be adopted. While we found a relevant number of qualitative studies, only a few followed a participatory approach. Considering that participatory action research is relevant for addressing social justice issues and giving power to marginalised groups and communities, we join several voices and calls for research that embraces critical, qualitative, and participatory action research in climate psychology (e.g., Peters, 2022; Trott et al., 2022). Participatory research could be used to understand and improve the capacity of inclusion of migrants and/or migrants' perspectives in participatory practices driven by local, regional and national governments explicitly

aimed at contrasting climate change, as well as to develop critical awareness on issues of migrant and climate justice on the general population.

Finally, we would like to emphasise that our call for more research on the topic of climate migration is grounded in principles of climate justice, transdisciplinarity and social transformation. Researchers should focus on critical and transformative climate justice (Newell et al., 2021; Sultana, 2021, 2022) and seek to envision and create "not only a world in which climate change no longer exacerbates social inequity but one in which societal responses to its impacts themselves offer an opportunity to build a more equitable and sustainable world" (Mikulewicz et al., 2023; p. 3). It is our hope that future climate migration research, particularly from critical, social and community psychology perspectives, will seek tocontribute to building such alternative futures.

References[1]

*Adams, H. (2016). Why populations persist: mobility, place attachment and climate change. *Population and Environment*, *37*, 429-448. https://doi.org/10.1007/s11111-015-0246-3

Amorim-Maia, A. T., Anguelovski, I., Chu, E., & Connolly, J. (2022). Intersectional climate justice: A conceptual pathway for bridging adaptation planning, transformative action, and social equity. *Urban Climate*, *41*, 101053. https://doi.org/10.1016/j.uclim.2021.101053

Anguelovski, I., Connolly, J. J., Pearsall, H., Shokry, G., Checker, M., Maantay, J., Gould, K., Lewis, T., Maroko, A., & Roberts, J. T. (2019). Why green "climate gentrification" threatens poor and vulnerable populations. *Proceedings of the National Academy of Sciences*, *116*(52), 26139-26143. https://doi.org/10.1073/pnas.1920490117

Anguelovski, I., Connolly, J. J., Cole, H., Baró, F., Martin, N., Conesa, D., Shokry, G., Del Pulgar, C. P., Ramos, L. A., Matheney, A., Gallez, E., Oscilowicz, E., Máñez, J. L., Sarzo, B., Beltrán, M. A., & Minaya, J. M. (2022). Green gentrification in European and North American cities. *Nature Communications*, *13*(1), 1-13. https://doi.org/10.1038/s41467-022-31572-1

*Arias, S. B., & Blair, C. W. (2022). Changing tides: public attitudes on climate migration. *The Journal of Politics*, *84*(1), 560-567. https://doi.org/10.1086/715163

*Ayeb-Karlsson, S., Kniveton, D., & Cannon, T. (2020). Trapped in the prison of the mind: Notions of climate-induced (im)mobility decision-making and wellbeing from an urban informal settlement in Bangladesh. *Palgrave Communications*, *6*(1), 1-15. https://doi.org/10.1057/s41599-020-0443-2

Bakewell, O. (2021). Unsettling the boundaries between forced and voluntary migration. In E. Carmel, K. Lenner, & R. Paul (Eds.), *Handbook on the Politics and Governance of Migration* (pp. 124-136). Edward Elgar.

Birman, D., & Bray, E. (2017). Immigration, migration, and community psychology. In M. A. Bond, I. Serrano-García, C. B. Keys, & M. Shinn (Eds.), *APA handbook of community psychology: Methods for community research and action for diverse groups and issues* (pp. 313–326). American Psychological Association. https://doi.org/10.1037/14954-018

*Blakeman, H., Simms, J. R., Waller, H. L., Jenkins, P., & Cass, K. (2023). Struggle for Transdisciplinary Moments: Building Partnerships for Resettlement. *Sociological Inquiry, 93*(2), 225-249. https://doi.org/10.1111/soin.12512

---

[1] * Articles included in the systematic review

Borderon, M., Sakdapolrak, P., Muttarak, R., Kebede, E. B., Pagogna, R., & Sporer, E. (2019). Migration influenced by environmental change in Africa: A systematic review of empirical evidence. *Demographic Research*, *41*(18), 491–544. https://doi.org/10.4054/DemRes.2019.41.18

Bouchard, J. P., Pretorius, T. B., Kramers-Olen, A. L., Padmanabhanunni, A., & Stiegler, N. (2023). Global warming and psychotraumatology of natural disasters: The case of the deadly rains and floods of April 2022 in South Africa. *Annales Médico-psychologiques, revue psychiatrique, 181*(3), 234-239. https://doi.org/10.1016/j.amp.2022.07.004

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*(2), 77-101. https://doi.org/10.1191/1478088706qp063oa

Braun, V., & Clarke, V. (2019). Reflecting on reflexive thematic analysis. *Qualitative Research in Sport, Exercise and Health*, *11*(4), 589-597. https://doi.org/10.1080/2159676X.2019.1628806

*Burrows, K., Desai, M. U., Pelupessy, D. C., & Bell, M.L. (2021). Mental wellbeing following landslides and residential displacement in Indonesia. *SSM - Mental Health, 1*, Article 100016. https://doi.org/10.1016/j.ssmmh.2021.100016

Charlton, J. (1998). *Nothing About Us Without Us: Disability Oppression and Empowerment.* University of California Press. https://doi.org/10.1525/california/9780520207950.001.0001

Chancel, L., Bothe, P., & Voituriez, T. (2023). *Climate Inequality Report 2023, Fair taxes for a sustainable future in the Global South*. World Inequality Lab. https://wid.world/news-article/climate-inequality-report-2023-fair-taxes-for-a-sustainable-future-in-the-global-south/

Chu, E., & Michael, K. (2019). Recognition in urban climate justice: Marginality and exclusion of migrants in Indian cities. *Environment and Urbanization*, *31*(1), 139-156. https://doi.org/10.1177/0956247818814449

Dubus, N. (2022). Resiliency with Forced Migrants: A Qualitative Study of Providers and Forced Migrants through a Resilience Perspective. *Behavioral Sciences, 12*(27), 1-13. https://doi.org/10.3390/bs12020027

Esposito, F., & Kellezi, B. (2020). Border Violence, Migrant Resistance, and Acts of Solidarity at Individual, Collective, and Community Levels: Critical Reflections from a Community Psychology Perspective. *Community Psychology in Global Perspective* *6*(1),1-16. https://doi.org/10.1285/i24212113v6i1p1

Esposito, F., Rebelo, D., Olanrewaju, M., Vine, M., Fernandes-Jesus, M., Bodden, D., Kalokoh, A., & Olson, B. (2023). A community psychology for migrant justice: Critically examining border violence and resistance during the COVID-19 syndemic. *American Journal of Community Psychology.* https://doi.org/10.1002/ajcp.12669

Fernandes-Jesus, M., Barnes, B., & Diniz, R. F. (2020). Communities reclaiming power in the face of climate change. *Community Psychology in Global Perspective*, *6* (2), 1–21. https://doi.org/10.1285/i24212113v6i2-2p1

Fernandes-Jesus, M., Rochira, A., & Mannarini, T. (2022). Opposition to immigration: How people who identify with far-right discourses legitimize the social exclusion of immigrants. *Journal of Community & Applied Social Psychology*, *33*(1), 14– 31. https://doi.org/10.1002/casp.2634

Garcia-Jaramillo, D., Santos, T. R., & Fernandes-Jesus, M. (2023). "Not wanting to see it is hypocrisy, it's denying what is obvious": Far-right discriminatory discourses mobilised as common sense. *Journal of Community & Applied Social Psychology*, *33*, 1413–1425. https://doi.org/10.1002/casp.2734

Ghio, D., Goujon, A., Natale, F., Alfredo, A., & Petroliaakis, T. (2023). Assessing populations exposed to climate change: a focus on Africa in a global context. *Population and Environment, 45*, 28. https://doi.org/10.1007/s11111-023-00439-y

Ghosh, R. C., & Orchiston, C. (2022). A systematic review of climate migration research: gaps in existing literature. *SN Social Sciences, 2*, 47 . https://doi.org/10.1007/s43545-022-00341-8

Griffiths, C., & Trebilcock, J. (2022). Continued and intensified hostility: The problematisation of immigration in the UK government's 2021 New Plan for Immigration. *Critical Social Policy*, *43*(3), 401-422 https://doi.org/10.1177/02610183221109133

*Haque, M. R., Parr, N., & Muhidin, S. (2019). Parents' healthcare-seeking behavior for their children among the climate-related displaced population of rural Bangladesh. *Social science & Medicine, 226*, 9–20. https://doi.org/10.1016/j.socscimed.2019.02.032

Haque, M. R., Parr, N., & Muhidin, S. (2020). The effects of household's climate-related displacement on delivery and postnatal care service utilization in rural Bangladesh. *Social Science & Medicine, 247*, 112819, 1-11. https://doi.org/10.1016/j.socscimed.2020.112819

*Heaney, A. K., & Winter, S.J. (2016). Climate-driven migration: an exploratory case study of Maasai health perceptions and help-seeking behaviors. *International Journal of Public Health, 61*(6), 641-649. https://doi.org/10.1007/s00038-015-0759-7

Hoffmann, R., Charlotte Wiederkehr, C., Dimitrova, A., & Hermans, K. (2022). Agricultural livelihoods, adaptation, and environmental migration in sub-Saharan drylands: a meta-analytical review. *Environmental Research Letters*, *17*(8), 083003. https://doi.org/10.1088/1748-9326/ac7d65

Holland, B. (2017). Procedural justice in local climate adaptation: political capabilities and transformational change. *Environmental Politics, 26(*3), 391-412. https://doi.org/10.1080/09644016.2017.1287625

*Hossain, B., Shi, G., Ajiang, C., Sarker, M. N. I., Sohel, M. S., Sun, Z., & Yang, Q. (2022). Climate change induced human displacement in Bangladesh: Implications on the livelihood of displaced riverine island dwellers and their adaptation strategies. *Frontiers in Psychology, 13*, 1-17. https://doi.org/10.3389/fpsyg.2022.964648

Huang, L. (2023). *Climate Migration 101: An Explainer.* Migration Policy Institute. https://www.migrationpolicy.org/article/climate-migration-101-explainer

IPCC (2023). Summary for Policymakers. In Lee, H. & Romero, J. (Eds). In *Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*. IPCC, Geneva, Switzerland.https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_SPM.pdf

*Islam, M. R. (2018). Climate change, natural disasters and socioeconomic livelihood vulnerabilities: migration decision among the char land people in Bangladesh. *Social Indicators Research, 136*, 575-593. https://doi.org/10.1007/s11205-017-1563-y

*Issifu, A. K., Darko, F. D., & Paalo, S. A. (2022). Climate change, migration and farmer–herder conflict in Ghana. *Conflict Resolution Quarterly, 39*(4), 421-439. https://doi.org/10.1002/crq.21346

Ionesco, D. (2019). *Let's Talk About Climate Migrants, Not Climate Refugees*. United Nations. https://www.un.org/sustainabledevelopment/blog/2019/06/lets-talk-about-climate-migrants-not-climate-refugees/

Jones, R. (2017). *Violent borders: Refugees and the right to move*. Verso Books.

Juhola, S., Heikkinen, M., Pietilä, T., Groundstroem, F., & Käyhkö, J. (2022). Connecting climate justice and adaptation planning: An adaptation justice index. *Environmental Science & Policy*, *136*, 609-619. https://doi.org/10.1016/j.envsci.2022.07.024

Kirmayer, L. J., Narasiah, L., Munoz, M., Rashid, M., Ryder, A. G., Guzder, J., Hassan, G., Rousseau, C., & Pottie, K. (2011). Common mental health problems in immigrants and refugees: General

approach in primary care. *CMAJ: Canadian Medical Association Journal*, *183*(12), E959. https://doi.org/10.1503/cmaj.090292

*Koubi, V., Böhmelt, T., Spilker, G., & Schaffer, L. (2018). The Determinants of Environmental Migrants' Conflict Perception. *International Organization, 72*(4), 905-936. https://doi.org/10.1017/S0020818318000231

Liberati, A., Altman, D. G., Tetzlaff, J., Mulrow, C., Gøtzsche, P. C., Ioannidis, J.P.A., Clarke, M., Devereaux, P. J., Kleijnen, J., & Moher, D. (2009). The PRISMA statement for reporting systematic reviews and meta-analyses of studies that evaluate healthcare interventions: explanation and elaboration. *BMJ, 339*, b2700. https://doi.org/10.1136/bmj.b2700*Mallick, B., Priovashini, C., & Schanze, J. (2023). "I can migrate, but why should I?" – Voluntary non-migration despite creeping environmental risks. *Humanities and Social Sciences Communications*, *10*(1), Article 34. https://doi.org/10.1057/s41599-023-01516-1

*Martin, M., Billah, M., Siddiqui, T., Abrar, C., Black, R., & Kniveton, D. (2014). Climate-related migration in rural Bangladesh: a behavioural model. *Population and Environment, 36*, 85–110 https://doi.org/10.1007/s11111-014-0207-2

*Marzouk, H. A., Duman, Y., Meier, J., Khudhur, Q. L., & Alani, O. (2022). Assessment of perceptions of climate change and its causes and impacts on mental health and psychosocial wellbeing among a group of internally displaced persons in Iraq. *Intervention-International Journal of Mental Health and Psychosocial Work in Areas of Armed Conflict, 20*(1), 98-106. https://doi.org/10.4103/intv.intv_40_21

McAuliffe, M., & Triandafyllidou, A. (2022). Report overview: Technological, geopolitical and environmental transformations shaping our migration and mobility futures. In *World Migration Report 2022*. International Organization for Migration (IOM).

Mikulewicz, M., Caretta, M. A., Sultana, F., & Crawford, N. J. W. (2023). Intersectionality & Climate Justice: A call for synergy in climate change scholarship. *Environmental Politics, 32*(7), 1275-1286. https://doi.org/10.1080/09644016.2023.2172869

Miller, F. (2019). Climate-related displacement in the Asia Pacific: Justice, rights and culture. *Asia Pacific Viewpoint*, *60*(2), 111-117. https://doi.org/10.1111/apv.12243

Morales-Giner, P., & Gedik, T. E. (2022). The Role of Place: An Analysis of Climate Change Perception in the European Union. *Social Currents*. https://doi.org/10.1177_23294965221139853

Newell, P., Srivastava, S., Naess, L. O., Torres Contreras, G. A., & Price, R. (2021). Toward transformative climate justice: An emerging research agenda. *Wiley Interdisciplinary Reviews: Climate Change*, *12*(6), e733. https://doi.org/10.1002/wcc.733

Obokata, R., Veronis, L., & McLeman, R. (2014). Empirical research on international environmental migration: a systematic review. *Population and Environmental, 36*, 111–135. https://doi.org/10.1007/s11111-014-0210-7

Ogunbode, C. A. (2022). Climate justice is social justice in the Global South. *Nature Human Behaviour*, *6*(11), 1443. https://doi.org/10.1038/s41562-022-01456-x

*Oswald Spring, Ú. (2013). Dual vulnerability among female household heads. *Acta Colombiana de Psicología, 16*(2), 19-30. https://doi.org/10.14718/ACP.2013.16.2.2

Page, M. J., Moher, D., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J.M, Akl, E. A., Brennan, S. E., Chou, R., Glanville, J., Grimshaw, J. M., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E. W., Mayo-Wilson, E., McDonald, S., McGuinness, L. A., Stewart, L. A., Thomas, J., Tricco, A. C., Welch, V. A., Whiting, P., & McKenzie, J. E. (2021). PRISMA 2020 explanation and elaboration: updated guidance and exemplars for reporting systematic reviews. *BMJ, 372,* Article 160. http://dx.doi.org/10.1136/bmj.n160

*Pardhi, A., Jungari, S., Kale, P., & Bomble, P. (2020). Migrant motherhood: Maternal and child health care utilization of forced migrants in Mumbai, Maharashtra, India. *Children and Youth Services Review, 110,* 104823, 1-5. https://doi.org/10.1016/j.childyouth.2020.104823

Peters, F. (2022). The role of critical methodologies in climate psychology scholarship: Themes, gaps, and futures. *South African Journal of Psychology*, *52*(4), 510-521. https://doi.org/10.1177/00812463221130158

Piguet, E. (2010). Linking climate change, environmental degradation, and migration: A methodological overview. *Wiley Interdisciplinary Reviews: Climate Change*, *1*(4), 517-524. https://doi.org/10.1002/wcc.54

Piguet, E. (2022). Linking climate change, environmental degradation, and migration: An update after 10 years. *Wiley Interdisciplinary Reviews: Climate Change*, *13*(1), e746. https://doi.org/10.1002/wcc.746

Piguet, E., Kaenzig, R., & Guélat, J. (2018). The uneven geography of research on "environmental migration." *Population and Environment*, *39*(4), 357–383. http://www.jstor.org/stable/45180134

Podesta, J. (2019). *The climate crisis, migration, and refugees*. Global Economy and Development at Bookings. https://www.brookings.edu/articles/the-climate-crisis-migration-and-refugees/

Popay, J., Roberts, H., Sowden, A., Petticrew, M., Arai, L., Rodgers, M., Britten, N., Roen, K., & Duffy, S. (2006). *Guidance on the conduct of narrative synthesis in systematic reviews: a product of the ESRC methods programme*. https://www.lancaster.ac.uk/media/lancaster-university/content-assets/documents/fhm/dhr/chir/NSsynthesisguidanceVersion1-April2006.pdf*Pucker, I., McCauley, M., Fox, K., & Jacobel, A. (2023). Residents of Hawaiʻi's Climate Decisions to Remain or Migrate. *Ecopsychology*, *15*(1), 56-68. https://doi.org/10.1089/eco.2022.0027

*Rai, A. (2022). Chasing the ghosts: stories of people left behind on the frontline of climate and ecological crisis. *South African Journal of Psychology, 52*(4), 460-471. https://doi.org/10.1177/00812463221130902

*Raoul, K. (2015). Can glacial retreat lead to migration? A critical discussion of the impact of glacier shrinkage upon population mobility in the Bolivian Andes. *Population and Environment, 36*, 480–496. https://doi.org/10.1007/s11111-014-0226-z

Rebelo, S., Fernández, M., & Meneses, C. (2020). Societies' hostility, anger and mistrust towards Migrants: A vicious circle. *Journal of Social Work*, *21*(5), 1142-1162. https://doi.org/10.1177/1468017320949377

Robinson, M., & Shine, T. (2018). Achieving a climate justice pathway to 1.5°C. *Nature Climate Change, 8*(7), 564–569. https://doi.org/10.1038/s41558-018-0189-7

Schmidt, K. (2021). The dynamics of attitudes toward immigrants: Cohort analyses for Western EU member states. *International Journal of Comparative Sociology, 62*(4), 281-310. https://doi.org/10.1177/00207152211052582

Scott, A. (2019). Contesting Disciplinary Boundaries. Richard Kilminster and the 'sociological revolution. *Human figurations, 8*(1). http://hdl.handle.net/2027/spo.11217607.0008.104

Sharma, N. (2020). *Home rule: National sovereignty and the separation of natives and migrants*. Duke University Press. https://doi.org/10.2307/j.ctv11smzfs

Sironi, A., Bauloz, C., & Emmanuel, M., (2019). *Glossary on Migration*. International Organization for Migration. https://publications.iom.int/system/files/pdf/iml_34_glossary.pdf

Smirnov, O., Lahav, G., Orbell, J., Zhang, M., & Xiao, T. (2022). Climate Change, Drought, and Potential Environmental Migration Flows Under Different Policy Scenarios. *International Migration Review*, *57*(2), 36-67-. https://doi.org/10.1177/01979183221079850

*Stanley, S. K., Ng Tseung-Wong, C., & Leviston, Z. (2022). Welcoming climate refugees to the United States: Do attitudes depend on refugee origins, numbers, or permanence? *Journal of Environmental Psychology, 83,* 101874. https://doi.org/10.1016/j.jenvp.2022.101874

Steinebach, C. (2023). *Psychology – finding answers for our times.* BPS. https://www.bps.org.uk/psychologist/psychology-finding-answers-our-times

Stierl, M. (2019). *Migrant resistance in contemporary Europe.* Routledge.

Sultana, F. (2021). Climate change, COVID-19, and the co-production of injustices: a feminist reading of overlapping crises, *Social & Cultural Geography*, *22*(4), 447-460. https://doi.org/10.1080/14649365.2021.1910994

Sultana, F., (2022). Critical climate justice. *Geographical Journal, 188*(1), 118-124. https://doi.org/10.1111/geoj.12417

Tenbrink, T., & Willcock, S. (2023). Place attachment and perception of climate change as a threat in rural and urban areas. *PLOS ONE*, *18*(9), e0290354. https://doi.org/10.1371/journal.pone.0290354

*Tschakert, P., Tutu, R., & Alcaro, A. (2013). Embodied experiences of environmental and climatic changes in landscapes of everyday life in Ghana. *Emotion, Space and Society, 7*, 13-25. https://doi.org/10.1016/j.emospa.2011.11.001

Trott, C. D., Reimer-Watts, K., & Riemer, M. (2022). Climate justice: In pursuit of a practical utopia: transitioning towards climate justice. C. Kagan, J. Akhurst, J. Alfaro, R. Lawthom, M. Richards, A. Zambrano (Eds.). *The Routledge International Handbook of Community Psychology: Facing Global Crises of Hope* (pp. 229-245). Routledge.

Trott, C. D., Rockett, M. L., Gray, E., Lam, S., Even, T. L., & Frame, S. M. (2020). "Another Haiti starting from the youth": Integrating the arts and sciences for empowering youth climate justice action in Jacmel, Haiti*. Community Psychology in Global Perspective*, 6(2), 48-70. https://doi.org/10.1285/i24212113v6i2-2p48

UNHCR (2016). *Frequently asked questions on climate change and disaster displacement*. https://www.unhcr.org/uk/news/stories/frequently-asked-questions-climate-change-and-disaster-displacement

Verbena, S., Rochira, A. & Mannarini, T. (2023). "A long journey to happiness": the young immigrants' experiences through the Transconceptual Model of Empowerment and Resilience. *Current Psychology, 42*(3), 31478–31494. https://doi.org/10.1007/s12144-022-04154-z

Waffenschmidt, S., Knelangen, M., Sieben, W., Bühn, S., & Pieper, D. (2019). Single screening versus conventional double screening for study selection in systematic reviews: a methodological systematic review. *BMC Medical Research Methodology, 19*, 132. https://doi.org/10.1186/s12874-019-0782-0

Walia, H. (2013). *Undoing border imperialism.* AK Press.

*Whitley, C. T., Rivers III, L., Mattes, S., Marquart-Pyatt, S. T., Ligmann-Zielinska, A., Olabisi, L. S., & Du, J. (2018). Climate-induced migration: using mental models to explore aggregate and individual decision-making. *Journal of Risk Research, 21*(8), 1019-1035. https://doi.org/10.1080/13669877.2017.1281331

*Willett, J., & Sears, J. (2020). Complicating our understanding of environmental migration and displacement: The case of drought-related human movement in Kenya. *International Social Work, 63*(3), 364-370. https://doi.org/10.1177/0020872818799431

*Wolsko, C., & Marino, E. (2016). Disasters, migrations, and the unintended consequences of urbanization: What's the harm in getting out of harm's way? *Population and Environment, 37*, 411-428. https://doi.org/10.1007/s11111-015-0248-1

*Yates, O. E., Groot, S., Manuela, S., & Neef, A. (2023). "There's so much more to that sinking island!"—Restorying migration from Kiribati and Tuvalu to Aotearoa New Zealand. *Journal of Community Psychology*, *51*(3), 924-944. https://doi.org/10.1002/jcop.22928