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Informational justice and environmental justice for climate refugees in times of the Anthropocene

Justiça informacional e justiça climática para refugiados climáticos em tempos de Antropoceno

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Abstract: The article analyses the implications of the lack of legal recognition of the category of climate refugees, articulating this debate in the dimensions of climate and informational justice. The start point is contextualising this phenomenon within the framework of the multiple crises of the Anthropocene, highlighting the increased vulnerability of populations in the Global South, historically less responsible for global warming, but disproportionately affected by its impacts. The study examines the historical, political, and legal obstacles that make it difficult to recognise climate refugees as legal subjects, highlighting the power asymmetries underlying the denial of this category. The methodology is based on a critical literature review, which underpins the concepts of climate justice and informational justice and analyses their intersections. Based on this framework, it is argued that access to information, communication, and international recognition is a central element in the fight for climate justice, being essential both for the protection of the rights of these subjects and for the formulation of adaptation and reparation policies. It is observed that, although national and international regulations recognise forced displacement as an adaptation strategy, a specific legal vacuum persists. This vacuum compromises not only the guarantee of rights, but also access to strategic information for survival, humanitarian support, and the circulation of essential data between people and organisations. At the end, the article maintains that the formal recognition of the climate refugees is essential for their full citizenship and for the construction of fair and supportive responses to the global climate crisis.

Keywords: climate refugees; informational justice; climate justice; Anthropocene; climate emergency.

Resumo: O artigo analisa as implicações da ausência de reconhecimento jurídico da categoria de refugiados climáticos, articulando este debate às dimensões da justiça climática e informacional. Parte-se da contextualização desse fenômeno no marco das múltiplas crises do Antropoceno, destacando a vulnerabilidade agravada das populações do Sul Global – historicamente menos responsáveis pelo aquecimento global, mas desproporcionalmente afetadas por seus impactos. O estudo examina os obstáculos históricos, políticos e jurídicos que dificultam o reconhecimento dos refugiados climáticos como sujeitos de direito, evidenciando as assimetrias de poder subjacentes à negação dessa categoria. A metodologia baseia-se em uma revisão bibliográfica crítica, que fundamenta os conceitos de justiça climática e informacional e analisa suas intersecções. A partir desse referencial, argumenta-se que o acesso à informação, à comunicação e ao reconhecimento internacional constitui um elemento central na luta pela justiça climática, sendo essencial tanto para a proteção dos direitos desses sujeitos quanto para a formulação de políticas de adaptação e reparação. Constata-se que, embora normativas nacionais e internacionais reconheçam o deslocamento forçado como estratégia de adaptação, persiste um vazio jurídico específico. Esse vazio compromete não apenas a garantia de direitos, mas também o acesso a informações estratégicas para a sobrevivência, o apoio humanitário e a circulação de dados essenciais entre pessoas em situação de deslocamento forçado. Ao final, o artigo sustenta que

o reconhecimento formal dos refugiados climáticos é condição fundamental para a efetivação de sua cidadania plena e para a construção de respostas justas e solidárias à crise climática global.

Palavras-chave: refugiados climáticos; justiça informacional; justiça climática; Antropoceno; emergência climática.

1. Introduction

Climate change and the environmental crisis have gained centrality in contemporary debate, driven by the predatory use of natural resources. The severity of this scenario led to the adoption of the term Anthropocene (Crutzen, 2002; Léna & Issberner, 2017; Chakrabarty, 2018; Latour, 2020) to characterize an era in which human actions have acquired the capacity to destabilize the Earth system, generating global warming, rising sea levels, loss of biodiversity, water scarcity, among other critical effects. The concept has the merit of synthesizing multiple interconnected crises – environmental, social, economic, and political – and simultaneously breaks the boundaries between natural and social sciences, by evidencing that environmental phenomena cannot be dissociated from the historical, cultural, and economic contexts where this *anthropos* resides.

Extreme climate changes, a characteristic phenomenon of the Anthropocene, are configured as the defining crisis of our time (Alto Comissariado das Nações Unidas para Refugiados [ACNUR], 2020). According to the UN (Organização das Nações Unidas [ONU], 1992), it is a phenomenon "attributed directly or indirectly to human activity that alters the composition of the global atmosphere and that is additional to the natural climate variability observed over comparable time periods" (ONU, 1992, p. 7). It is not just an environmental problem, but a humanitarian challenge, whose social, political, and economic impacts have been undermining the structures of States, aggravating situations of instability, and increasing the risk of conflicts. Its effects resonate more acutely on vulnerable and marginalized populations, but also reach countries with industrialized economies, often forcing population displacements and the abandonment of home territories.

The relationship between environmental disasters and human migrations accompanies History, initially marked by displacements motivated by resource scarcity and climate change (Gemenne, 2007). Currently, however, the increase in extreme events associated with climate change has intensified forced migration flows. In 2024 alone, more than 45 million people were internally displaced due to these disasters, almost double the average of the last decade (Internal Displacement Monitoring Centre [IDMC], 2025). Estimates for the coming years are alarming, indicating that by 2050, more than 200 million people may depend on international humanitarian aid due to the combination of climate disasters and their socioeconomic

impacts (International Federation of Red Cross and Red Crescent Societies [IFRC], 2019).

This scenario reveals not only failures in mitigation and adaptation but also a profound informational crisis. Deficiencies in risk communication, in the circulation of data on prevention, response, and assistance, as well as in the visibility of these displacements, increase the vulnerability of these populations. Moreover, the scarcity of communication mechanisms that allow climate refugees themselves to access vital information – about rights, support networks, and services – and to share assessments about their conditions and possibilities among themselves further aggravates their condition of unprotection and invisibility.

There is a controversy surrounding the use of the term "climate refugees" that reflects informational and symbolic disputes. Although it is not formally recognized by international law – given that most displacements occur within countries and do not fit the definition of the 1951 Refugee Convention – the term carries political and communicative weight, exposing the severity of human rights violations associated with the climate crisis (ACNUR, 2024a). In this article, we choose to use the expression "climate refugees" precisely because it centralizes a reality often made invisible by restrictive institutional frameworks, which silence both the subjects and the data about their trajectories and living conditions. In the face of this scenario of forced displacements, exacerbated by informational erasures and normative gaps, it becomes evident that this is not just an environmental crisis, but a crisis of rights and recognition. Overcoming these limitations involves recognizing the demands for socio-environmental justice of these populations in the formulation of regulatory frameworks, public policies, and in the strategies for mitigating and adapting to the environmental disasters that are the root of their displacements (Kälin, 2010; Ripple et al., 2020).

In 2019, more than 11,000 scientists issued a public statement warning, "clearly and unequivocally", that "the planet Earth is facing a climate emergency" (Ripple et al., 2020, p. 8). The term climate emergency, widely disseminated in academic, political, and media circles, not only signals the severity of environmental risks but also highlights the associated socioeconomic and humanitarian impacts, including the growing number of people forced to migrate for climate reasons. Thus, it becomes essential that the demands for socio-environmental justice for these populations – the climate refugees – be treated as a priority both in the formulation of regulatory frameworks and public policies and in the strategies for mitigating and adapting to the environmental disasters that are the root of their displacements (Kälin, 2010; Ripple et al., 2020).

This study examines how the notions of climate and informational justice are mobilized in debates about climate refugees and what the implications are for their recognition and protection. To this end, we propose

an approach that links the concepts of informational justice and climate justice, in order to provide an analytical framework to examine how difficulties in accessing information – especially in contexts of vulnerability – compromise the ability of marginalized groups to face environmental crises. Communication and access to information are, therefore, fundamental dimensions for both addressing disasters and exercising the rights that promote citizenship, well-being, and a dignified life.

These issues lead us to the general objective of this article, which is to identify and analyze the obstacles to climate refugees' access to justice from the concepts of informational and climate and environmental justice. We believe that this approach can provide the basis for an understanding of how climate refugees can be empowered and not just welcomed, thus claiming their rights to dignity.

This article is organized as follows: after this introduction, in section two, the adopted methodology is presented. In section three, we discuss how climate change exacerbates historical inequalities between the Global North and South. Section four examines legal and international issues related to the debate on climate refugees. In section five, the main conceptual foundations of informational justice and climate justice are discussed. Finally, section six discusses the research findings, reflecting on the intersections between these concepts and their implications for building the debate on climate refugees.

2. Methodology

This research adopts a qualitative, exploratory, and analytical approach, articulating a bibliographic review and documentary analysis. The objective is to build an analytical structure capable of highlighting the vulnerabilities that affect the condition of climate refugees and to propose justice mechanisms that recognize such specificities.

The investigation was guided by a critical conception of qualitative research, which understands knowledge as situated, historical, and influenced by power relations (Kincheloe & McLaren, 2002; Denzin & Lincoln, 2018). An interpretative and reflective stance was adopted, attentive to the social and political contexts that shape both the discourses about climate refugees and the legal and institutional frameworks that regulate them (Fairclough, 2001; Minayo, 2012).

The first stage consisted of a systematic mapping of academic and institutional literatures that address the themes of climate justice, environmental justice, informational justice, and forced displacements for environmental reasons. Scientific articles, books, reports from international organizations (such as ACNUR, IPCC, and UKCCMC), documents from civil society organizations, and national and international legal regulations

were considered. This stage aimed to identify the main concepts, analytical categories, and recurring theoretical approaches in the different fields.

The analytical treatment of the materials followed the principles of critical documentary analysis (Cellard, 2008; Bowen, 2009), which recognizes documents as social and cultural productions embedded in disputes over meanings. Exhaustive reading procedures, thematic categorization, comparison between perspectives, and identification of points of intersection among the mobilized conceptual fields were used. The methodological guidelines of Minayo (2012) and Gil (2019) contributed to the systematization of the analysis, ensuring rigor in the selection and interpretation of the corpus.

Inspired by Pierre Bourdieu's reflexive sociology (2004), the research sought to understand the forced displacements resulting from climate change as effects of historical dynamics of domination, operating both in the material and symbolic realms. This perspective allowed situating the figure of the "climate refugee" in a field of geopolitical and institutional tensions, marked by disputes over categories, recognitions, and invisibilities.

The analysis process was guided by an active search for meaningful connections between the fields of climate, environmental, and informational justice. This articulation enabled the formulation of five interrelated thematic axes (Table 1), through which the multiple dimensions of injustice faced by displaced populations were sought to be understood.

Moreover, the intersectional perspective, as developed by Crenshaw (1991) and deepened by Collins (2017), guided the analysis of the multiple oppressions that traverse the experience of climate refugees, allowing for questioning the idea of vulnerability as a homogeneous condition, highlighting the differential forms of exposure and exclusion.

The bibliographic and documentary review was also justified by the need to critically examine the legal and institutional frameworks that (do not) formally recognize the category of "climate refugee". Such absence of international legal recognition, as pointed out by Gemenne (2011) and Mayer (2016), has direct implications for the protection of the rights of these populations. The analysis of these documents sought to reveal the normative and discursive mechanisms that sustain this gap and, at the same time, legitimize the urgency of addressing it.

Next, the resulting analytical structure from this journey is presented, synthesized into five thematic axes (Table 1) that served as a basis for interpreting the structural, symbolic, and epistemic dimensions that configure the condition of climate refugees.

Table 1 Analytical structure for understanding and proposing justice mechanisms for climate refugees.

Thematic axis	Key concepts	Contribution to the situation of climate refugees
Environmental and climate justice	Historical responsibility, vulnerability, adaptation.	Recognition of structural inequalities and proposal for reparation and equitable redistribution of risks and resources.
Informational justice	Access to information, production of knowledge, epistemic voice.	Guarantee of access to information and active participation of subjects in the construction of narratives and decisions.
Recognition and human rights	Invisibility, legal status, forced displacement	Defense of the formal recognition of the category and the right to adequate international protection
Intersectionalities	Regional, class, gender, and race inequalities	Identification of multiple oppressions shapes displacement and guides fairer policies
Participation and Agency	Mobilization, self-determination, and inclusion in decisions	Valuing the political action of subjects in building solutions that consider their realities.

3. Climate change and the inequalities between the Global North and South

Climate change is profoundly transforming the Earth system, putting not only fauna and flora at risk but also all of humanity, although the impacts are distributed very unevenly. In recent years, the exponential increase in climate-related disasters and the growing number of people affected highlight that the climate crisis has solidified as one of the greatest challenges of our time. The year 2024 was officially recorded as the hottest year in human history (Aliança Brasileira pela Cultura Oceânica, 2024), a milestone that illustrates the worsening of this scenario. Climate catastrophes – increasingly frequent, intense, and devastating – reaffirm that the climate emergency is not a future possibility but a present reality, as shown in Table 2, which systematizes some of the disasters that occurred between April 2024 and June 2025.

The records in Table 2 show the potential for devastation from environmental disasters that primarily affect the poorest countries located in the Global South. The greater vulnerability of Global South countries to environmental disasters resulting from climate change can be evidenced in Figure 1, based on the Notre Dame Global Adaptation Initiative (ND-GAIN), which consists of more than 74 variables, updated for the year 2023.

In contrast, Figure 2 shows that the Global South is the region that contributes the least to climate change, despite being the most affected by its impacts. Data from the Environmental Justice Foundation (Environmental Justice Foundation [EJF], 2009) show that the 50 poorest and most vulnerable countries in the world are responsible for less than 1% of global carbon dioxide (CO_2) emissions. Even more strikingly, the United Nations World Social Report 2025 reveals that the poorest 50% of the global population account for only 12% of carbon emissions, even though they are responsible for absorbing 75% of the relative income losses caused by extreme weather events. This scenario deepens socioeconomic inequalities, undermines

Table 2 Chronology of environmental disasters associated with climate change (May 2024 to June 2025).

Period	Disaster and Location	Impacts
Apr-May 2024	Floods in Rio Grande do Sul (Brazil) – >60% of the state affected	Record rainfall (420 mm +), ~2.3 million affected, ≥169 dead, ~600 thousand displaced
May 2024	Tornado outbreak in the USA (various regions)	More than 165 tornadoes, several casualties, and infrastructure damage – according to NOAA (scribd.com, foxweather.com, climate.gov).
May 2024	Tornado in Pampanga, Philippines. (May 27)	EF2 event, damaged ~250 residences.
April 2025	Tornado and flooding outbreak (Mississippi, Tennessee, Kansas, etc.) (April 2-7)	156 tornadoes, 24 dead, hundreds injured, and massive flooding.
March 2025	Floods in Bolivia	More than 50 dead, ~100,000 displaced.
January 2025	Wildfires in Los Angeles (Palisades/Eaton)	~24 dead, 13,000 structures destroyed.
January 2025	Floods in southeastern Brazil (Rio de Janeiro, Santa Catarina)	Infrastructure affected, evacuees – reported by the press.
May 2025	Tornado in Puerto Varas, Chile (May 25)	EF1: 13 injured, ~250 houses damaged.
June 2025	Extreme heat in India: Dehradun, Delhi, etc.	Temperature >44 °C, red alert issued.
June 2025	Severe droughts in Northwestern Europe (UK, France, etc.)	Second hottest May on record, risk of water scarcity.
June 2025	Floods in eastern China (Guangdong, Guangxi)	Dozens dead, thousands displaced.
June 2025	Floods in the Eastern Cape, South Africa	≥ 86 dead, thousands of houses destroyed.

progress in poverty reduction, and exposes the structural links between the climate crisis, global inequality, economic instability, and sociopolitical conflicts (ONU, 2025).

For more than three decades, the Intergovernmental Panel on Climate Change (IPCC) has warned, in its 1992 report, that both rapid onset events, such as tropical cyclones, and gradual processes – such as desertification and sea level rise – especially in low-lying regions and Pacific island nations, were driving human displacements. The document recognized that forced migration represents one of the most severe and complex consequences of the climate crisis (Intergovernmental Panel on Climate Change [IPCC], 1992).

4. Climate refugees and discrimination

Displacements forced by climate change highlight the need to advance towards a perspective of ecologization of human rights that recognizes the inseparability between the rights of people, territories, and ecosystems, overcoming the nature-culture dichotomy (Santos, 2010; Grear, 2015). This approach is also articulated with the paradigm of interculturality, which proposes valuing different epistemologies, knowledge, and ways of life of the peoples most affected by the effects of the climate crisis and the migratory flows it intensifies. However, these displacements not only reveal but also challenge the boundaries of human rights, making visible the

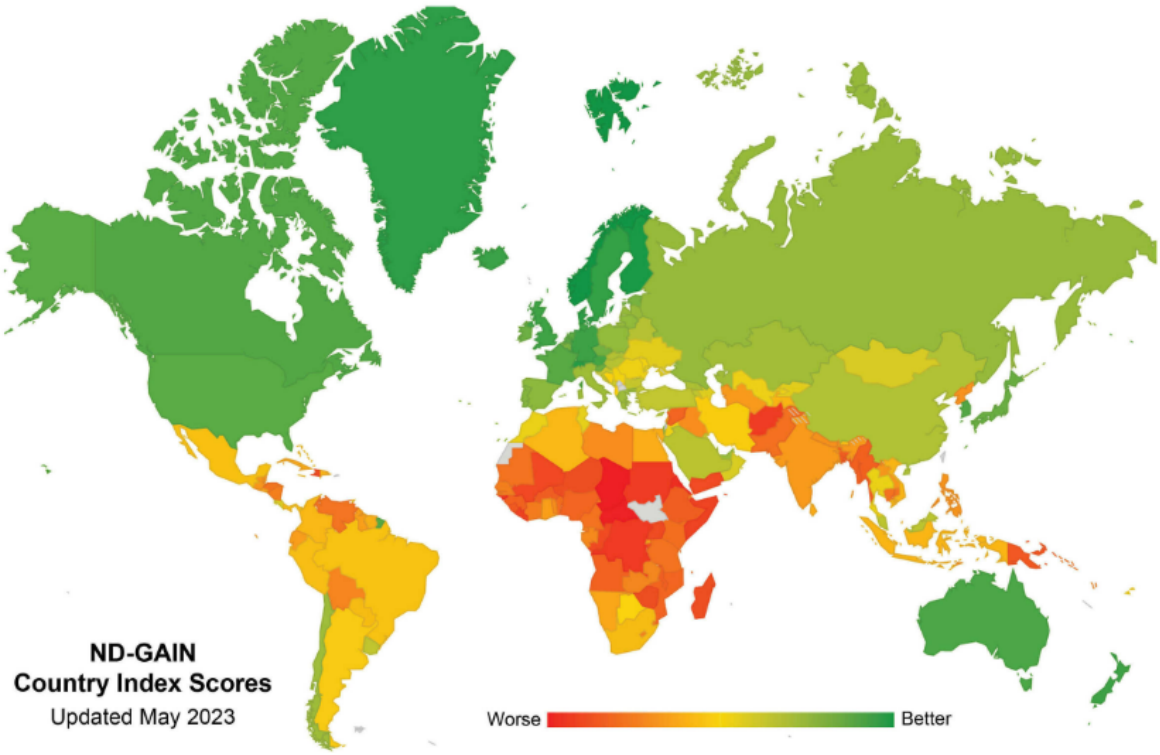

Figure 1

Vulnerability of Global South countries to environmental disasters resulting from climate change.

SOURCE: Notre Dame Global Adaptation Initiative [ND-Gain], 2024.

contemporary expressions of environmental racism, xenophobia, and social fractures exacerbated by neoliberalism, whose logic of precarization and dismantling of social rights, as analyzed by Brown (2019), feeds both the erosion of democracy and the rise of far-right movements, which react with hostility to migrant, racialized, and impoverished bodies. Thus, thinking about climate justice and the rights of climate refugees requires not only legal and institutional responses but also an epistemological and ethical shift that addresses these multiple layers of inequality.

Oliveira (2004, p. 87) notes that "one of the greatest paradoxes of the present is that the free movement of ideas, products, and capital, increasingly comprehensive, does not correspond to the freedom of movement". If borders are open for the flow of goods, they are increasingly closed for people". The dialectic between the responsibility of the North and the impacts on the South highlights an environmental challenge, as well as a climate justice crisis, since the environmental and social costs are disproportionately borne by populations least responsible for historical emissions.

The disparities in terms of vulnerability, prevention, and adaptation to climate-related disasters in Southern countries give rise to social and political conflicts. Climate refugees from Southern countries suffer a second layer of injustice related to discrimination. For example, in 2015, the former president of the European Commission (EC), Jean-Claude Juncker, warned about the "refugee crisis" (Juncker, 2015) and the large flow of people arriving in Europe. The intention of the speech was to draw public attention to this issue, a necessary initiative to address the crisis. This type

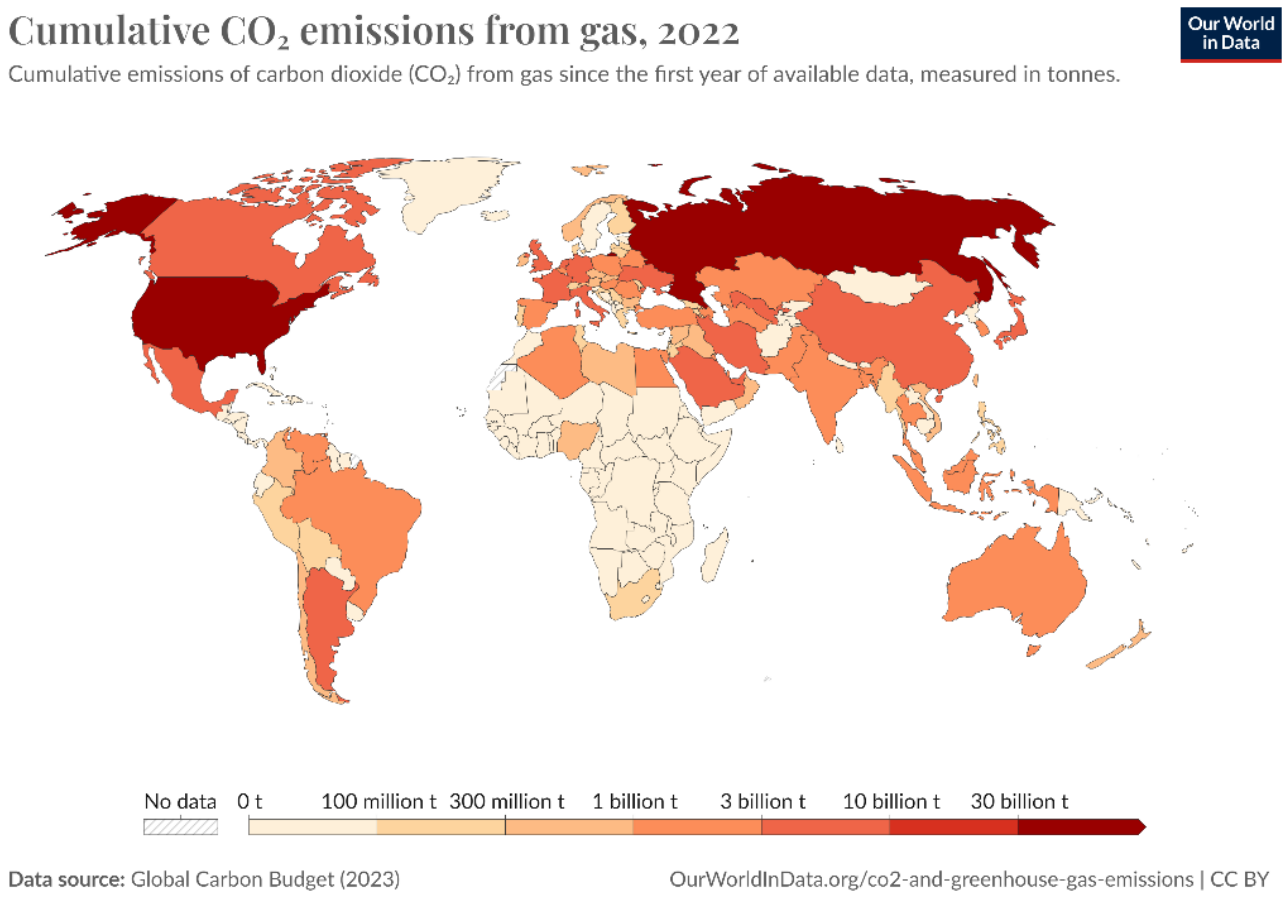

Figure 2

The darker colors show countries responsible for the highest CO_2 emissions in 2022 (measured in tons).

SOURCE: Our World in Data [OWID], 2022.

of speech, however, served to inflame nationalist, anti-immigration, and xenophobic thoughts:

> Presenting migrants (and refugees) as a threat to personal security and existing cultural identities is a tactic that anti-immigration advocacy groups and nationalists have perfected (along with the right-wing media). This type of security framing promotes strongly self-enhancing values, encouraging a very inward-looking perspective, fear of outsiders, and a nationalistic attitude. (UK Climate Change & Migration Coalition [UKCCMC], 2012, p. 16).

Indeed, climate refugees are subject to the same forms of discrimination as any other category of refugees and, as such, end up acting as a "strategic catalyst" for xenophobic and racist actions and policies (Hiraide, 2022).

4.1. The non-recognition of climate refugees

The United Nations Environment Programme (UNEP) coined the definition of environmental refugees in 1985:

> Those people who have been forced to leave their *traditional habitat* temporarily or permanently because of a marked environmental disruption (natural and/or triggered by people) that jeopardized their existence and/or seriously affected the quality of their life. By "environmental disruption" in this definition is meant any physical, chemical and/or biological changes in the ecosystem (or the resource

> base) that render it, temporarily or permanently, unsuitable to support human life. (El-Hinnawi, 1985, p. 4).

Studies on climate refugees began in the 1980s, but this category is still considered "new", with persistent obstacles to providing assistance, especially in the legal field. Although the topic is not new on the agenda, to this day, climate refugees do not have rights recognized by international law. According to Machado (2020), although the term "refugee" seems to have a specific and limited meaning, in reality, it encompasses a wide range of possibilities that, however, are distributed unevenly in terms of power and representation. The author clarifies that classification issues demonstrate that what is at stake is how an entity classifies, separates, and hierarchizes differences.

The legal framework regarding climate refugees has its origins in the end of World War II, when the world faced an unprecedented crisis: the high number of forced displacements in Europe due to conflicts, the need to flee, or the helplessness caused by the destruction of cities. In light of this situation, the United Nations High Commissioner for Refugees (UNHCR) was created in 1950 to assist and protect the large number of homeless people. The international legal structure for refugees is enshrined in the 1951 Convention Relating to the Status of Refugees, which is still the most important normative instrument for refugees, with broad support and recognition from the international community. According to this document, refugees are

> [...] any person who fears being persecuted for reasons of race, religion, nationality, social group, or political opinions, finds themselves outside the country of their nationality and cannot or, due to that fear, does not want to seek the protection of that country, or who, if they do not have nationality and are outside the country in which they had their habitual residence as a result of such events, cannot or, due to the aforementioned fear, does not want to return to it (ACNUR, 1951, p. 2).

Sixteen years later, after the establishment of UNHCR, the Protocol was signed in 1967, which updated the 1951 Convention and extended its mandate to cover not only European borders, as was originally the case. Among the new developments, UNHCR adopted a new definition of the term "refugee", which, to the surprise of some, did not include climate refugees (ACNUR, 2024b). The absence of a legal framework condemns climate refugees to legal helplessness, dependence on charity and the goodwill of NGOs and the State, without any guarantee of protection for their fundamental rights.

4.2. Semantic issues for a new category of refuge

Although UNHCR does not recognize the term "climate refugee", it is widely used in the media, by activists, and by non-governmental organizations.

These positions highlight how the linguistic, legal, and material spheres are interconnected and mutually influence each other (Dun & Gemenne, 2008; Hiraide, 2022).

As Hiraide (2022) points out, anti-colonial movements and post-colonial studies show that both structural domination and the resistance of marginalized groups to oppression also manifest in the linguistic field. The author argues that the term "climate refugee" is broad and varied, referring to "language as a site of struggle at which violence can be produced, facilitated, and legitimised [...], whether direct (e.g. inciting physical harm) or structural (e.g. policy framings and decisions which harm particular groups [...])" (Hiraide, 2022, p. 268).

The dispute over the appropriate terminology to be used to define this group highlights the interests behind UNHCR's decisions, which prefer to use the term "climate displaced" to avoid transferring humanitarian reception commitments and access to fundamental rights to the countries potentially targeted by refugees. The recognition of a *status* for climate refugees has become essential in the times of the Anthropocene, as these groups need urgent international protection, even within their countries of origin (Ramos, 2011). The lack of legal status for these refugees is, above all, a reflection of the influence of countries that avoid taking on responsibilities. As long as they are not recognized, climate refugees will bear the double burden of being citizens of the Global South who, due to global warming caused by countries in the Global North, have lost what little they had and cannot find support in less vulnerable countries.

4.3. Climate refugees in times of the Anthropocene

The climate crisis manifests not only in the form of extreme events or environmental degradation but also as a potent factor in intensifying social, territorial, and geopolitical conflicts. Harald Welzer (2012) calls this phenomenon "climate wars", pointing out that climate change exacerbates disputes over essential natural resources – such as water, arable land, and food. The growing scarcity of resources, caused by prolonged droughts, desertification, rising sea levels, and ecosystem degradation, thus becomes fuel for armed conflicts, civil wars, and territorial disputes, deepening inequalities and forced displacements. In this scenario, climate wars operate as a silent vector in the production of new flows of forced displacement, increasing the number of climate refugees. As Welzer (2012) emphasizes, it is not just about direct disputes over water or land, but about complex chains of causality, in which the environmental crisis interacts with pre-existing economic, political, ethnic, and colonial factors. Thus, the global environmental crisis not only threatens livelihoods but also generates social instability and conflicts that disproportionately affect populations in the Global South.

These dynamics, which include the so-called climate wars, highlight

that this is not just an isolated environmental crisis, but a convergence of multiple crises – ecological, climatic, social, and geopolitical – that feed back into each other. It is in this context that the concept of Anthropocene (Crutzen, 2002) gains strength, used by various authors to characterize a new era in which human activities have become a planetary-scale force, capable of generating irreversible transformations in the Earth system, with profound social and environmental repercussions.

The concept of Anthropocene has been consolidating precisely because it expresses this condition of interdependent multiple crises that threaten ecological systems and human societies on a global scale. Although it plays an important role in synthesizing the magnitude of anthropogenic impacts on the planet, this concept has also been the target of criticism, especially for naturalizing responsibilities and obscuring the historical and structural asymmetries that sustain these crises (Issberner & Léna, 2018). In this sense, the theoretical contributions that criticize the notion of Anthropocene enrich the debate on climate and informational justice by highlighting that the unequal ecological exchanges between the Global North and South cannot be understood in isolation from the historical dynamics of coloniality, racism, and capitalism.

Authors like Jason Moore (2015) propose the notion of Capitalocene, arguing that it is the logic of capitalism – and not humanity in the abstract – that is at the root of the ecological crisis, historically structured by the exploitation of nature, labor, and territories. Haraway et al. (2019) propose the term Plantationocene, which highlights how the plantation model was decisive in the formation of the socio-environmental inequalities that persist to this day. As the authors summarize, it is a system sustained by the "substitution of peoples, crops, microbes, and life forms; forced labor; and, crucially, the disordering of times of generation across species, including human beings" (Haraway et al., 2019, p. 6). In the same vein, Ferdinand (2022) adopts the concept of Plantationocene, emphasizing that the colonial matrix of the *plantations* remains as the foundation of contemporary environmental inequalities. The author also articulates this critique with the concept of Negrocene, highlighting how environmental racism, originating in colonialism and the forced diaspora of African peoples, is central to the production of current socio-ecological asymmetries. Such perspectives help to understand how the legacies of colonialism and global capitalism continue to produce socio-environmental vulnerabilities that asymmetrically impact, especially, the populations of the Global South, including climate refugees.

5. Towards informational justice and climate justice

Starting from this critical perspective on the structural roots of contemporary crises, it becomes evident that responses to their impacts cannot be

restricted to technocratic, market-based, or supposedly neutral solutions. On the contrary, as highlighted by authors like Schlosberg e Collins (2014) and Ferdinand (2022), such responses require intersectional approaches that integrate ethical, informational, socio-environmental, and historical reparation dimensions, especially regarding the populations of the Global South, racialized communities, and historically marginalized peoples.

Climate justice presupposes recognizing that the effects of climate change hit hardest those who contributed the least to its origin. This implies not only facing environmental challenges but also recognizing historical inequalities and ensuring the redistribution of resources, responsibilities, and rights on a global scale. In turn, informational justice, in the terms of authors like Gurumurthy e Bharthur (2020), ensures that access, control, and circulation of information are carried out in a fair, transparent, inclusive, and culturally situated manner, a fundamental condition for the most vulnerable groups to exercise their self-determination, political agency, and participation in decisions that affect their territories and ways of life.

5.1. Informational justice

According to Mathiesen (2015), informational justice is a multifaceted concept that encompasses different dimensions of human interactions with information. Moreover, it is configured as a relevant indicator of social justice in its broad dimension, since opportunities for access, receipt, and sharing of information represent fundamental mechanisms for promoting improvements in all aspects of life. For the author, informational justice considers three main ways in which people relate to information: as researchers, as sources, and as subjects. These aspects condition the way individuals access, produce, and share information, while also showing how structural inequalities can influence each of these conceptions (Mathiesen, 2015). Thus, for people to be treated fairly as information seekers, it is necessary:

(i) distributive justice, so that they have equitable access to data;

(ii) participatory justice, so that they are treated fairly as sources of information, having the opportunity to express their perspectives and to be considered in collective decision-making processes;

(iii) recognition justice, so that people are represented in an inclusive and democratic manner, ensuring that the needs and interests of different groups are effectively represented.

The concept of informational justice brings together fundamental ethical and moral principles to combat social inequalities and promote access to and sharing of information, ensuring fair and equitable treatment in different social domains. As Mathiesen (2015, p. 210) explains, “information as a primary good includes both a freedom aspect and a tangible good aspect. The first is the freedom to receive and transmit information; the second is the real availability of information as a good”. As Amartya Sen (1979)

emphasizes, the problem of focusing only on access to certain resources is that we sometimes neglect the physical, mental, and social situation of people, which leads to different and not always expected outcomes. Indeed, it is important to emphasize that an individual has access to information, as long as they are free not only to obtain it but also to use it and benefit from it. When measuring distributive justice, for example, we need to analyze whether the individual/community has access to these dimensions.

Butcher (2009) questions the possibility of informational justice in a context where information is instrumentalized by denialist groups of different ideological spectrums. The author presents the categories of information-wealthy and information-poor, which reflect structural asymmetries inherent in the capitalist system. These issues, debated for decades, remain relevant, as the inequality in access to knowledge persists, being one of the main obstacles to inclusion and equity. Contemporary informational challenges, sealed in this dynamic, intensify with new layers of complexity, such as the concentration of algorithmic power and mass misinformation, which further marginalize vulnerable groups. Butcher (2009) also highlights that the control of information remains centralized in a small group of privileged organizations, reinforcing a model in which knowledge holders impose barriers to ownership and to the autonomous production and management of information by marginalized populations.

In the context of climate refugees and the unprecedented climate crisis we currently face, the "information oligarchs" (Butcher, 2009, p. 59) control information on a large scale and exercise informational control across extensive dimensions. This ranges from restricting access to information that would guarantee the rights of people affected by climate disasters to hiding data that is favorable to them. This can occur, for example, through the dissemination of false news that discredits and/or downplays expert warnings about the urgent need to reduce fossil fuel use or the call for sustainable measures to prevent the planet's temperature from rising 1.5 °C.

The International Panel on the Information Environment (International Panel on the Information Environment [IPIE], 2025) report highlights that the global debate on climate change is not limited to issues related to carbon or greenhouse gases, but also involves a struggle for credibility. Climate actions have been facing increasing obstacles in the informational realm, where distorted messages, emotional appeals, and targeted persuasion strategies are used to delay urgent initiatives. Such practices compromise the quality of public debate, undermine trust in institutions, and inhibit participation from both civil society and policymakers. The report is categorical in demonstrating how climate misinformation has become a strategic power tool. Robust evidence indicates that:

> [...] powerful actors – including corporations, governments, and political parties – intentionally spread inaccurate or misleading narratives about anthropogenic

> climate change. These narratives circulate across digital, broadcast, and interpersonal communication channels. The result is a decline in public trust, diminished policy coordination, and a feedback loop between scientific denialism and political inaction. There is a severe gap in research on climate information integrity in the Global South, where impacts are likely to be significant but poorly documented. (IPIE, 2025, p. 2).

In this scenario, the concept of informational justice becomes particularly relevant. According to Johnson (2018), it refers to the normative assessment of social structures that regulate the distribution of information and its effects on individual autonomy and human development. In times of climate emergency, informational asymmetries not only exacerbate situations of vulnerability but also drastically compromise the adaptive capacity of the most at-risk groups. From this perspective, information transcends its condition as a mere resource, configuring itself as a fundamental right to the construction of socio-environmental resilience. Reflecting on informational justice, therefore, proves to be an ethical imperative for the governance of a world in rapid ecological transformation.

5.2. Climate justice, origins and connections

The differentiation between environmental justice, ecological justice, and climate justice is fundamental to understanding the levels of disputes surrounding the multiple contemporary crises. Environmental justice arises from struggles against the unequal distribution of risks and environmental harms, emphasizing the impacts on human communities – especially marginalized, racialized, and economically vulnerable groups (Acselrad et al., 2004; Schlosberg, 2007). In this sense, it is a justice centered on repairing human inequalities associated with environmental degradation processes. As discussed by Acselrad (2002), it includes not only the equitable distribution of impacts but also the recognition of structural inequalities that amplify the vulnerability of certain groups.

According to the U.S. Environmental Protection Agency (Environmental Protection Agency [EPA], 2024, p. 1), environmental justice is “the fair treatment of people of all races, cultures, incomes, and educational levels with respect to the development and enforcement of environmental laws, regulations, and policies. [...]”. Environmental justice movements have developed and expanded globally over the past 40 years, promoting the formation of organizations dedicated to this cause in different parts of the world. According to Martinez-Alier (2011), environmental justice organizations oppose extractive industries, advocate for the fight against rampant pollution and climate change, and present themselves as allies of environmental groups from developed countries that criticize the obsession with gross domestic product (GDP) growth.

Ecological justice, in turn, expands this scope by incorporating the in-

trinsic rights of nature and non-human beings. Based on a biocentric or ecocentric ethic, this conception challenges the foundations of extractivism and anthropocentrism, proposing a reorganization of the relationships between society and nature (Cavalieri, 2020; Ferdinand, 2022). It questions the limits of the current civilizational model and proposes a recognition of ecologies as moral and political subjects (Serres, 1990).

Climate justice emerges as a category that dialogues with these two perspectives but is specifically structured around the global and intersectional inequalities produced and exacerbated by the climate crisis. It recognizes that the populations least responsible for greenhouse gas emissions are, paradoxically, the most affected by their impacts (Schlosberg & Collins, 2014). At the same time, climate justice articulates itself both with the struggle for redistribution and recognition – characteristics of environmental justice – and with the need to deeply rethink civilizational models and ecosystemic relationships – thus aligning with the principles of ecological justice. It is, therefore, a conception of justice that is simultaneously social, environmental, climatic, and epistemic, requiring approaches that encompass not only reparation and mitigation but also structural transformation, decoloniality, and respect for planetary boundaries.

The notion of climate justice gained visibility in 2004 with the launch of the manifesto called Climate Justice Now! The Durban Declaration on Carbon Trading (Carbon Trade Watch, 2004), supported by hundreds of scientists and organizations worldwide. Since then, the concept has expanded in academic research and public policies. Phenomena such as desertification and extreme events, for example, intense rains, heatwaves, and rising sea levels, have caused forced displacements of populations, highlighting the human dimension of climate injustice and reinforcing the urgency of global policies that recognize and address such disparities (Milanez & Fonseca, 2010).

Climate justice, by incorporating the specific implications of climate change, demands a more robust, integrated, and sensitive international approach to historical and structural inequalities. Addressing the climate crisis implies confronting the structural causes of environmental destruction, rooted in a capitalist economic model that perpetuates and deepens social, territorial, and epistemic inequalities. These inequalities are not isolated but develop in an intersectional and cumulative manner, impacting more strongly the groups and territories that are vulnerable – many of which have historically been subjected to coloniality, environmental racism, and economic exploitation.

According to Welzer (2012), the effects of the climate crisis are not limited to material or environmental losses but operate as catalysts for conflicts, forced displacements, and disputes over increasingly scarce resources. In addition, there is what Nixon (2011) conceptualizes as *slow violence*, a form of diffuse, gradual, and often invisible violence, whose impacts ac-

cumulate over time, especially affecting the poorest, peripheral, and racialized populations. In this context, the analysis of climate justice must necessarily focus on power dynamics, examining the social, economic, and institutional relations that not only produce and exacerbate climate change but also shape political, economic, and technoscientific responses – often reproducing the same logics of exclusion, expropriation, and inequality that are at the root of the climate crisis itself.

6. Discussion

The intensification of climate change leads to extreme consequences for the global population, highlighting the need for urgent measures that ensure the protection of all people, regardless of race, gender, class, and nationality. According to Bravo (2020, p. 25), "the effects of climate change can be direct and indirect": direct, as they are associated with climate-environmental impacts, such as the significant increase of fungi, the emergence of new viruses, and changes in ecosystems; while indirect effects involve "non-climatic" aspects, which include forced migrations caused by climate, the emergence of climate refugees, changes in urban logistics, and impacts on public health. The reflections caused by these effects will be greater or lesser depending on the vulnerability and resilience of the affected population.

As previously seen, the Global North and South present significant differences regarding resources, prevention, and forms of mitigation. As Bravo (2020) observes, most research on climate adaptation is structured based on the conceptual approaches of vulnerability and resilience. The author highlights that vulnerability is not limited to the direct impacts of climate change but results from the interaction of these events with specific contexts marked by socioeconomic, political, cultural, geographical trajectories, and local dynamics. This means that the factors explaining the vulnerability of Florida citizens in the face of Hurricane Milton in 2024 are profoundly distinct from those that affected the population of Haiti after Hurricane Matthew in 2016, reflecting historical, structural, and contextual inequalities. Quintslr et al. (2022) state that:

> The relevance of the environmental issue makes it crucial to develop strategies in the field of information so that the topic occupies a space in society compatible with its complexity and urgency, as well as with its potential impacts on the quality of life on the planet (Quintslr et al., 2022, p. 3).

The complexity of this issue deepens when it is observed that both access to information and environmental impacts are distributed unevenly among populations. It can be inferred that the relationship between climate justice and informational justice is presented in the way mechanisms are promoted for public participation, enabling vulnerable groups, including climate

refugees, to have an active voice in decision-making processes that affect their lives. The realization of these concepts has the potential to strengthen the autonomy of different groups, encouraging their self-organization and political engagement in the fight for environmental preservation, aiming to reduce the effects of climate change, which have caused numerous disasters and affected countless communities.

Moreover, informational justice and climate justice explicitly dialogue when referring to broad and accurate access to information by the population, especially vulnerable groups that are on the front lines of the impacts caused by climate change and other adversities related to the use of the planet's natural resources. It is through access to information, effective participation, and consequently, the recognition of these individuals as relevant agents for solving environmental problems that climate justice can be fully realized.

The articulation between informational justice and climate justice reveals not only complementary objectives but also a field of political dispute around the production, access, and control of information in crisis contexts. Both focus on guaranteeing fundamental rights, but it is in informational justice that a strategic point is delineated for destabilizing the epistemic asymmetries that sustain environmental exclusions. By ensuring not only access but the legitimacy of knowledge produced by historically marginalized subjects, such as climate refugees, informational justice challenges the structures that concentrate decision-making power, visibility, and recognition. In this sense, its promotion constitutes an indispensable element for climate justice to transcend the compensatory logic and be realized as an effectively redistributive, participatory, and transformative process.

In the context of the Anthropocene, the interconnection between informational justice and climate justice becomes crucial to understand and face the challenges that fall upon climate refugees. The Anthropocene, as an era marked by human influence on the Earth system, highlights the deep socio-environmental inequalities, as the most vulnerable populations in the Global South are the most affected by climate change, even though they are the least responsible for greenhouse gas emissions. Informational justice, by ensuring equitable access to information and communication, is a precondition for climate justice, as it empowers communities to make informed decisions and claim their rights in the face of climate impacts. The lack of a specific legal framework for climate refugees and the concentration of informational power in the hands of "information oligarchs" perpetuate the invisibility and marginalization of these groups. Therefore, the integration of these concepts can promote a fairer and more inclusive approach, in which access to information and climate protection are fundamental rights, allowing climate refugees to reclaim their citizenship and dignity in an increasingly human-affected world.

7. Final considerations

In light of the forced displacements caused by the climate crisis, it becomes urgent to deepen the debate on human rights, recognizing that the traditional frameworks of this field, historically centered on a liberal, individualistic, and anthropocentric conception, are insufficient to address contemporary socio-environmental challenges.

The article analyzed the mechanisms by which the effects of climate change disproportionately impact the Global South, highlighting how this logic of unequal distribution of impacts is articulated with contexts of historical vulnerability, structural precariousness, and asymmetries in access to resources, information, and rights. Although there are national and international documents that recognize displacement as a strategy for adapting to climate change, significant gaps remain in the protection and guarantee of rights for populations displaced by these events. This situation highlights issues of justice, which are analyzed here from the perspectives of climate justice and informational justice. The analysis of the condition of these refugees highlights their origins, destinations, and international legal support, feeding the discussion on informational justice and climate justice in the context of environmental refugees. Informational justice can be understood as a precondition for climate justice, as it ensures access to relevant information and the possibility of communication among the refugees themselves and between them and support institutions. The lack of a legal status for climate refugees contributes to their invisibility and leads to the obligation to provide support and shelter, especially by the countries that contributed most to climate change. The legal invisibility of refugees compromises the informational and communicational dynamics that hinder the mobilization and claims of these groups.

Amid the growing circulation of news about climate disasters, it is crucial to expand access to information and promote digital and informational inclusion in cities, communities, and villages. This is a fundamental condition not only for the protection of affected populations but also for the affirmation of the rights of those who, even in the face of institutional protection frameworks, have been displaced and made vulnerable as climate refugees.

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