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From Alarm to Bogus: Climate Migration Discourse Across German-, Spanish-, and Dutch-Language Twitter/X (2015–2023)

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This article examines how climate migration is framed on X, drawing on an initial collection of 335,221 German-, Dutch-, and Spanish-language tweets from 2015, 2019, and 2023, of which 70,110 were retained for analysis. Using BERTopic-based thematic analysis and retweet network analysis combined with qualitative framing analysis of a subsample, we show that X reproduces established victim and threat frames from legacy media while giving visibility to a distinctive bogus frame. This frame depicts climate migration as fabricated, exaggerated, or politically manipulated by elites to harm native populations. We argue that its prominence on X stems from its role as a discursive bridge between climate denialism and digital nativism. Thematic and network analyses link this frame to polarized, anti-green, climate-skeptical, and anti-migration debates, especially in German- and Dutch-language discussions. The findings demonstrate how social media reshapes climate migration discourse by amplifying conspiratorial and nativist frames.

Keywords: climate migration, climate refugee, X, Twitter, framing, topic modeling, network analysis

Climate migration refers broadly to human mobility in the context of climate change. Alongside related concepts such as environmental migrants, climate refugees, and climate mobilities, it has become a prominent topic in public, political, policy, and academic debates (Baldwin, 2022; Bettini, 2013; Biermann & Boas, 2012; Boas et al., 2019; El-Hinnawi, 1985; International Organization for Migration, 2023; McAdam, 2010). Empirical research increasingly shows that climate change can shape human mobility, though in complex, indirect, and context-dependent ways (Daoust & Selby, 2024; Moore & Wesselbaum, 2023), yet

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the terminology and categorization of such mobility remain legally, politically, and conceptually contested (Baldwin, 2022; Boas et al., 2019). Climate migration is therefore not only an empirical and policy issue but also a contested object of public communication. How it is framed shapes whether climate-related mobility becomes understood as a humanitarian concern, a matter of responsibility and protection, a threat to receiving societies, or a claim to be rejected altogether.

Existing research has examined climate migration primarily through legacy media, policy discourse, institutional communication, and national online news environments. By legacy media, we refer to established journalistic institutions such as newspapers and broadcasters that operate through professional editorial gatekeeping within the hybrid media system (Chadwick, 2017). This literature has shown that climate migration is often represented through victim and threat frames and using alarmist rhetoric, including projections of mass displacement and narratives of future movements from the Global South to Europe (Bettini, 2013; Bonneux & Van Praag, 2024; Farbotko, 2005; Høeg & Tulloch, 2019; Munoz, 2024; Randall, 2017). Far less is known about how climate migration is discussed and framed online. Two studies provide partial exceptions. Łódzki and Kocierz (2025) examine the Polish context but focus on national online news media rather than user interaction on social platforms. Burch (2021), by contrast, examines how climate-affected communities frame themselves on social media, but does not analyze large-scale platform dynamics. It therefore remains unclear whether social media reproduces legacy media frames or enables different, more platform-specific framings.

X, formerly Twitter, is a particularly relevant platform for examining this question because it is not only a space where opinions are expressed but also one where political meanings are amplified through retweets, hashtags, influencers, and algorithmic visibility. Political actors, journalists, activists, advocacy organizations, alternative media, and ordinary users use X to contest meanings and circulate claims in real time. The platform has also been especially consequential for populist communication, as far-right and anti-migration actors use it to bypass traditional gatekeepers and amplify anti-elite, anti-green, and climate-skeptical narratives (Baqir et al., 2025; Falkenberg et al., 2022; Jungherr et al., 2019; Walsh, 2023). X is therefore well-suited for this study because its public, text-based, and retweet-driven architecture allows the systematic analysis of framing, thematic context, and networked visibility over time. At the same time, recent restrictions on data access, including the end of the Academic API, make such research increasingly difficult and shape the scope of our empirical design.

This article examines how climate migration is framed and amplified on X across German-, Dutch-, and Spanish-language debates. Drawing on 70,110 tweets from 2015, 2019, and 2023, we combine qualitative framing analysis of 3,386 tweets with BERTopic-based thematic analysis and retweet network analysis. We argue that X does not simply reproduce the victim and threat frames identified in legacy media research. It also gives visibility to a distinctive bogus frame that presents climate migration as fabricated, exaggerated, opportunistic, or politically manipulated. This frame matters because it helps climate-skeptical actors overcome a paradox identified in earlier media research: They can mobilize against climate migration as a migration issue without accepting climate change as a cause of migration (Randall, 2017). By analyzing the thematic contexts and retweet networks through which this frame circulates, the article shows how social media connects climate denialism, digital nativism, and populist backlash in ways that reshape climate migration communication.

Theoretical Framework

Climate migration is marked by conceptual and legal ambiguity. Terms such as "environmental migrant," "climate migrant," "climate refugee," "climate displacement," and "climate mobilities" are often used inconsistently across academic, policy, media, and public discourse. This reflects the complexity of climate-related mobility itself: Climate change rarely acts as a single cause of movement, but interacts with economic, political, social, and environmental conditions (Boas et al., 2019; Boas et al., 2022). In this article, we use "climate migration" as the main analytical term for public discourse about human mobility in the context of climate change. We use "climate refugee(s)" when referring to the language of media, institutions, and X users. Although the term "climate refugee" remains legally contested and is not recognized under the 1951 Refugee Convention, previous media studies show it is one of the most common public terms for climate-related mobility (Bates, 2002; Bonneux & Van Praag, 2024; Høeg & Tulloch, 2019; Randall, 2017). Our data show a similar pattern, especially in German- and Dutch-language discussions, so we retain the term when it helps describe how the issue is named and framed in the data set.

Climate Migration, Framing, and Legacy Media

Climate change can shape human mobility, but this relationship is complex, uneven, and mediated by social, economic, political, and environmental conditions. Climate impacts may contribute to migration or displacement by undermining livelihoods, habitability, or security, but they may also constrain movement by reducing the resources people need to leave. For this reason, recent scholarship emphasizes that climate migration should not be understood through a simple, linear model of climate change causing migration. Instead, climate-related mobility is better understood as multicausal and context-dependent, involving migration, displacement, adaptation, and immobility (Boas et al., 2019; Boas et al., 2022; Moore & Wesselbaum, 2023; Singh et al., 2025; Wesselbaum, 2023).

This empirical complexity is precisely why framing matters: Public communication often simplifies climate migration into more familiar narratives of suffering, crisis, threat, or responsibility. Following Goffman (1974/1986) and Entman (1993), we understand frames as interpretive structures that select certain aspects of reality and make them more salient in defining what an issue is, why it matters, who is responsible, and which responses appear appropriate. Framing is therefore not simply about what is discussed but also about how an issue is problematized in specific sociopolitical contexts and which kinds of power relations these problematizations promote (Carragee & Roefs, 2004; Matthes & Kohring, 2008).

Existing research on legacy media, institutional communication, and political discourse shows that climate migration has often been framed through two recurring frames that are also prominent in migration communication more broadly: victimhood and threat. The victim frame presents climate migrants as vulnerable populations in need of humanitarian, legal, or moral protection. The threat frame, by contrast, portrays climate-related mobility as a danger to host societies, economies, borders, or cultural cohesion (Bonneux & Van Praag, 2024; Dreher & Voyer, 2015; Farbotko, 2005; Høeg & Tulloch, 2019; Munoz, 2024; Parsons, 2021; Randall, 2017; Ransan-Cooper et al., 2015). These frames are often

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intensified by alarmist rhetoric, speculative estimates, and simplified science communication, including claims about future waves or millions of climate migrants moving from the Global South to Europe. Such alarmism has been a persistent concern in climate migration scholarship, not only in relation to media coverage but also in non-governmental organization (NGO) reports, policy discourse, and party-political communication, where dramatic projections can make climate migration visible while also simplifying causality, depoliticizing mobility, and enabling securitized responses (Bettini, 2013; Boas et al., 2019; Bonneux & Van Praag, 2024; Hartmann, 2010; Randall, 2017).

Critical scholarship has challenged these dominant representations. Although humanitarian and threat framings appear politically opposed, both can reduce affected people to objects of governance: either as passive victims to be saved or as mobile populations to be managed and contained. Bettini (2013, 2014) argues that such narratives depoliticize climate migration by presenting it as a problem of future population management rather than as a question of historical responsibility, inequality, and political agency. Baldwin (2022) extends this critique by showing how the figure of the climate migrant is often racialized, projected onto populations in the Global South, and imagined as a future problem for the West. These critiques remain important, yet they have largely focused on legacy media, policy, and institutional discourse. Less is known about how these frames are reproduced, transformed, or contested in social media environments where climate skepticism, anti-migration politics, and populist backlash circulate through different communicative logics.

The Climate Migration Paradox in Right-Wing and Climate-Skeptical Discourse

Recent studies of partisan and alternative media show that climate migration creates a particular problem for right-wing and climate-skeptical discourse. On the one hand, climate migration can be folded into anti-immigration politics by presenting future movement as a burden on borders, welfare systems, or national identity. On the other hand, using climate migration as an immigration threat requires at least some acceptance that climate change contributes to migration. This creates a paradox: If climate-skeptical actors fully deny climate change, the threat of climate-induced migration loses plausibility; if they accept the link, they risk legitimizing arguments for climate action, adaptation support, or humanitarian protection. Randall (2017) already identified this tension in right-leaning media, and recent work suggests it remains unresolved in more polarized media environments.

Munoz's (2024) analysis of American media is especially useful because it reveals both the value and limits of existing climate migration framing categories. The findings show that Breitbart and Fox News link climate refugees to immigration, borders, and partisan conflict, while Breitbart is also the outlet most strongly associated with disbelief in climate change and climate mobility, yet the same analysis reports "victim" as the dominant frame in Breitbart's coverage. This points to an unresolved ambiguity: In right-wing populist discourse, the implied victims are often not climate migrants themselves, but taxpayers, border systems, national communities, or "native" populations allegedly threatened by green and liberal climate and migration policy. Similarly, critiques of alarmism operate differently across ideological contexts. While critical scholarship has challenged apocalyptic climate migration narratives for simplifying mobility and enabling securitization, far-right media may appropriate anti-alarmist language to dismiss climate science, delegitimize climate mobility, and redirect fear toward elites and migrants. Munoz's findings

therefore suggest that polarized media discourse may involve frame inversions and hybridizations that older victim/threat typologies cannot fully capture.

Arghavan's (2023) discussion of climate refugees, "alternative facts," and ecofascism makes this far-right logic more explicit. He shows how alt-right and conservative actors can use selective facts, fake-news accusations, and conspiracy narratives either to deny global warming or to recast environmental crisis as a reason for exclusionary nationalism. In this discourse, climate and migration are organized through an us-versus-them logic: National communities are imagined as needing protection from racialized migrants, globalist elites, or demographic replacement. Ecofascist and white-nationalist environmentalism extends this logic by linking the protection of nature to the protection of borders and national identity. Together, Arghavan (2023) and Munoz (2024) show that the framing environment surrounding climate migration is changing: Alternative media, far-right actors, and conspiratorial discourses increasingly challenge who gets to define the issue and which kinds of claims become visible. However, if Web 2.0-era alternative media and party politics already unsettled legacy media framing, social media further changes the conditions of framing by allowing such actors to interact directly, amplify one another, and build networked publics around climate, migration, and national identity.

Networked Framing, Populism, and Conspiracy on X

Social media changes the conditions under which frames are produced, circulated, and amplified. In legacy media, framing is shaped by editorial routines, professional norms, and institutional gatekeeping. On X, by contrast, frames circulate through short, rapidly moving, and often affective messages that can be reposted, mocked, quoted, and recontextualized by users across political positions. Institutional actors do not disappear: Journalists, parties, experts, advocacy organizations, alternative media, influencers, and ordinary users participate in the same communicative space, yet visibility is shaped less by editorial authority than by interactional dynamics such as retweets, hashtags, mentions, influencer circulation, and algorithmically mediated engagement (Bennett & Pfetsch, 2018; Jungherr et al., 2019; Meraz & Papacharissi, 2013). These conditions are especially relevant for far-right and populist communication. Populist discourse often relies on moralized antagonism, simplified causal explanations, anti-elite claims, and direct appeals to "the people." Such claims travel easily in platform environments where outrage, irony, sarcasm, and accusation can be compressed into repeatable messages. Recent work on far-right social media shows that exclusionary ideas are circulated not only through explicit hostility. They are also mainstreamed through humor, affective appeal, platform-native styles, and repeated proximity to ideologically related content (Nangle & d'Haenens, 2026). This matters for climate migration because platformed communication can normalize exclusionary or conspiratorial claims, making them appear familiar, entertaining, or commonsensical rather than extreme.

The concept of digital nativism helps explain how migration-related claims become part of this wider communication ecosystem (Walsh, 2023). Digital nativist discourse links migration to national decline, cultural threat, welfare abuse, border insecurity, or demographic replacement while presenting these claims as resistance to liberal, cosmopolitan, or globalist elites. On social media, these claims can connect with broader repertoires of anti-science and anti-elite discourse, including climate skepticism, anti-green backlash, anti-NGO suspicion, public health conspiracies, and distrust of mainstream media.

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These connections do not require a single, fully coherent ideological program. Instead, they can operate as discursive alliances organized around shared enemies, emotional tones, and oppositional styles, reflecting populism's capacity as a thin-centered ideology to combine with nativism and other ideological repertoires (Mudde, 2004).

These conditions turn framing into a struggle over networked visibility. When far-right, populist, or climate-skeptical actors repeatedly connect climate migration to existing anti-elite and anti-migration repertoires, they do not merely express one interpretation among others. They can make climate migration appear as a politically urgent and suspicious issue within users' everyday social media diets. Through repeated exposure, particular frames can become more visible than their numerical presence alone would suggest. The question, then, is not only whether X reproduces the victim and threat frames identified in legacy media research. It is also whether the platform enables additional framings that arise from the interaction among climate skepticism, populist anti-elitism, and digital nativism, and how these framings gain visibility through thematic contexts and retweet networks.

Research Questions

Building on this literature, the article investigates how climate migration frames are produced, circulated, and amplified on X across German-, Dutch-, and Spanish-language debates. The analysis is guided by three research questions:

RQ1: To what extent does climate migration discourse on X reproduce established legacy media frames, and which additional or distinctive frames emerge in this platformed environment?

RQ2: What are the main thematic contexts in which climate migration is discussed across the three language spheres, and how are these contexts related to different frames?

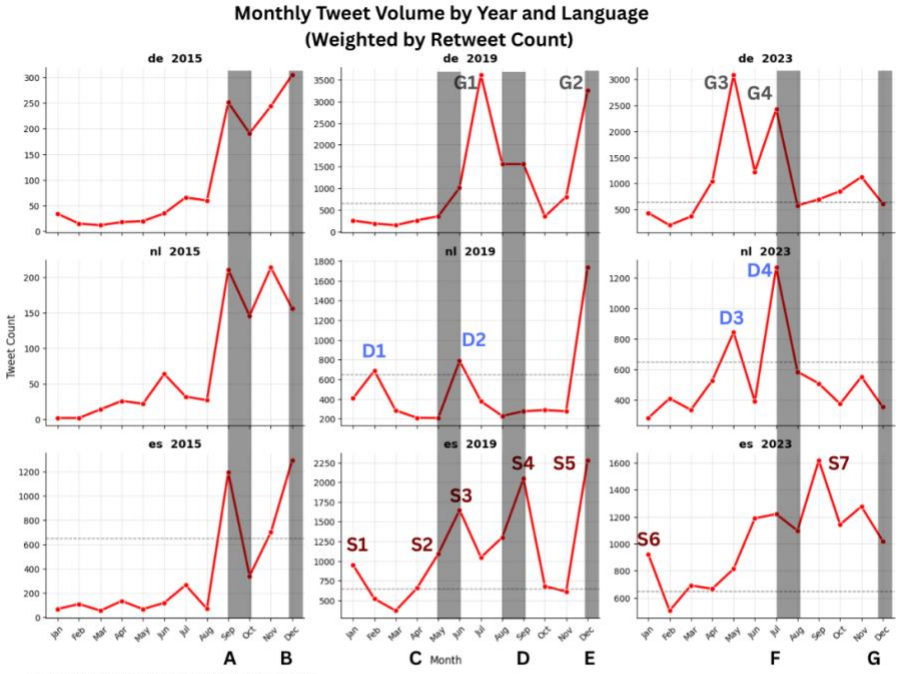
RQ3: Which retweet network structures, actor communities, and opinion leaders amplify climate migration frames on X?

Data and Methods

Data Collection and Cleaning

The study draws on German-, Dutch-, and Spanish-language posts from X collected through the commercialized X API. We first used a broad multilingual keyword query combining climate- and migration-related terms, which returned 335,221 posts (see Supplementary Material S1). Because this query also retrieved posts that mentioned "climate" and "migration" as separate issues, as well as related words and inflected forms, most of the collected data were not relevant to climate migration. We therefore combined BERTopic-assisted semantic filtering with rule-based inclusion criteria. The final analytical data set consisted of 70,110 climate-migration-related tweets from 2015, 2019, and 2023 (Table 1 and S3). These years were selected as strategic snapshots. The year 2015 captures the European migration crisis and the Paris Agreement; 2019 captures intensified climate mobilization, Fridays for Future, and the UN Climate Change

Conference (COP25); and 2023 provides the most recent full-year snapshot available after major changes to X's governance and data-access conditions. Figure 1 shows the temporal distribution of the filtered tweets, together with selected paraphrased and translated examples.



Global Events/Tweets (Bold Grey Vertical Lines)

A – Sep 2015 – Syrian refugee crisis peak mediatization, CIM alarmist articles, and role of climate change in Syria in media and on X.
B – 30 Nov- 12 Dec 2015 – Paris Agreement adopted at COP21 (Paris).
C– 24 May 2019 – Second Global Climate Strike in 1,600 towns across 125+ countries.
D – Sep 2019 – Central American Dry Corridor migration driven by climate-induced droughts. & IPCC Special Report on the Ocean and Cryosphere in a Changing Climate released. & Global Week for Future strikes with up to 7.6 million participants from 150 countries. & UN Climate Action Summit (New York), Greta Thunberg's "How dare you" speech; Hurricane Dorian hits Bahamas.
E – Dec 2019 – COP25 (Madrid).
F – July 2023 – Greece's wildfires displace thousands, seen as a case of CIM within Europe by many.
G– 30 Nov-12 Dec 2023 – COP28 (Dubai).

German-language viral tweets/debates

G1 – Jun/Jul 2019 – Sea-Watch 3 captain Carola Rackete defies Italian port ban to dock with rescued migrants, sparking international debate; Aug 2019 - Climate emergency vs. refugees: "Isn't it irresponsible to accommodate climate refugees in cities with a climate emergency?"
G2 – Dec 2019 – "The European Parliament has just declared a climate emergency... Illegal climate refugees in the EU must be deported."
G3 – May/Jun 2023 – "Climate crisis is overpopulation crisis"; "Climate refugees are relabeled migrants of 2015"; "Climate Pass."
G4 – Jul 2023 – Spain's ground temps hit 60°C: "Spain will no longer be a vacation destination, but a place of origin for climate refugees."

Dutch-language viral tweets/debates

D1 - Feb 2019 - "If sea levels rise, we will need to move to Germany, What if they introduce a quota?Where is the place for Dutch CIM?"
D2 - June 2019 - A video of Italian populist politician Salvini with Dutch text against climate refugees goes viral.
D3 - May 2023 - Viral CIM tweets about drought, hunger, heat, sea-level rise and political tensions, with both alarmist and mocking tones.
D4 - July 2023 - Thousands flee Greek Islands due to wildfires, and critique of VVD due to their "attempt to ban saving refugees"

Spanish language viral tweets/debates

S1 - Jan 2019 – Viral tweets linked climate change to hunger, drought, and forced migration, blaming government inaction.
S2 - Apr/May 2019 - "Climate change causes more migrations than war and economic factors"
S3 - June 2019 - Catalan vs. Spanish CC policy, World Environment Day, calls to recognize climate refugees on World Refugee Day.
S4 - Sep 2019 - "The UN notes a record number of refugees with 70 million people worldwide. CC is already worsening the problem."
S5 – Dec 2019 – "International Migrants Day highlights hunger, poverty, conflict, and climate change as drivers of migration."
S6 – Jan 2023 – A viral anti-migration tweet claims the lexicon has shifted to label migrants as "climate refugees."
S7 – Sep 2023 – Greek wildfire-displaced "climate refugees" in Koutsochero camp face same restrictive conditions as other refugees.

Figure 1. Temporal distribution of climate migration tweets.

Note. Bold gray lines mark global events across data sets, although related peaks may occur later in some languages. Numbered labels (e.g., G1) indicate local peaks or especially viral tweets (see the thematic

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analysis in the Results section). Tweets are translated and paraphrased to reduce traceability. The horizontal line marks the average monthly volume (650 tweets).

The study includes German-, Dutch-, and Spanish-language posts to compare climate migration debates across distinct linguistic and political contexts. German- and Dutch-language posts capture Western and Northern European debates in which climate policy, asylum politics, and far-right populism are strongly politicized. Spanish-language posts capture a more geographically dispersed language sphere, spanning Spain and Latin America, where climate migration may be more directly connected to climate vulnerability, development, and regional migration politics. English-language posts were excluded because broad data collection through the commercialized X API was prohibitively expensive and because English-language media representations of climate migration have already received more scholarly attention. Since the data were collected in early 2024, some historical posts were no longer retrievable because of deleted accounts, account departures following the ownership change, and other platform-level data loss beyond our control.

Research Design and Methods

The main analytical focus of the article is the qualitative framing analysis. We drew a random sample from each language-year cell, with a minimum of 350 tweets per cell. This produced a manually coded sample of 3,386 tweets. One of the authors is proficient in all target languages. The analysis was conducted using English translations, but tweets were checked against the original wording and, where necessary, against the wider tweet context and linked material. The coding examined how climate migration was problematized in each tweet. We started from frames identified in previous climate migration research, especially victim and threat frames, while remaining open to inductive categories. This inductive openness was necessary because many tweets did not fit established legacy media frames. The coding therefore combined deductive and inductive analysis, supported by systematic memo writing and repeated comparison across languages, following common qualitative framing-analysis procedures (Matthes & Kohring, 2008; Munoz, 2024; Ransan-Cooper et al., 2015). Because tweets are short, highly contextual, and often address climate migration only as one issue among others, many posts did not express a clear climate migration frame. Some tweets, for example, discussed climate change, migration, climate policy, or political actors while mentioning climate-related mobility only indirectly or as one possible consequence. We therefore distinguished tweets with a clear climate migration frame from unframed, weakly framed, or ambiguous tweets in our sample. Table 2 in the Results section reports the final distribution of manually coded frames. To assess coding reliability, a second coder independently coded a validation sample of 80 tweets, consisting of 20 tweets from each frame category and 20 unframed tweets. Agreement was high, with 87.5% agreement and Cohen's kappa = .833. Disagreements were discussed and used to refine borderline coding decisions. See S5 for more details.

Thematic and network analyses were used in supporting and explanatory roles. For the thematic analysis, we first used BERTopic during data cleaning to identify and remove irrelevant clusters, such as metaphorical uses of climate or references to animal migration. BERTopic is a transformer-based topic-modeling approach that uses sentence embeddings, making it well-suited to short, complex, multilingual text data without requiring translation (Egger & Yu, 2022; Grootendorst, 2022). Put simply, BERTopic groups

short texts by semantic similarity, allowing us to identify clusters of tweets that discuss similar issues. Details of the data-cleaning procedure and results are provided in Supplementary Material S2.

We initially also explored BERTopic as a second step for identifying frames. This proved insufficient because topics did not map neatly onto frames. Many thematic clusters, understood here as categories of topics or subjects of tweets, contained polarized debates in which users addressed similar issues from opposing positions. Other tweets evaluated climate change, migration, or political actors without making climate migration itself the object of evaluation. We therefore used BERTopic-based thematic analysis to provide a macrolevel account of what users discuss when they refer to climate migration. These categories serve as indicators of which themes become more or less prevalent across languages and years on X. The thematic categories were created in relation to the research aims and topics from the literature and should be understood as interpretive groupings rather than objective units.

Retweet network analysis was used to examine the polarized communities and influential users (Freelon, 2020; Recuero et al., 2019). Retweet networks show which users' messages were repeatedly circulated and therefore help identify amplification and visibility. Retweets were treated as traces of spread: They indicate whose messages are repeated, which users become central, and how communities form around shared interpretations of climate migration. These networks are analytical abstractions rather than direct representations of how users experience the debate. They are nevertheless useful for visualizing patterns of amplification, centrality, and community structure and for explaining why some frames might have become more visible than others. In polarized language-year networks, we distinguished between majority and minority clusters and examined which actors, themes, and frames became most visible within them. As shown in the results, the majority clusters in the most polarized networks were dominated by populist, climate-skeptical, or anti-migration actors. The Supplementary Material provides the full keyword lists, exclusion criteria, coding examples, codebook, BERTopic procedure, timeline figures, and community-level network tables.

Table 1. RQs, Methods, and Data.

RQs	Method	Data
RQ1: Framing Analysis	manual coding	3,386 sampled original tweets, of which 1,499 contained a clear climate migration frame
	word co-occurrence analysis (Figure 2)	1,499 framed climate migration tweets
RQ2: Thematic Analysis	BERTopic + manual validation (Figure 3)	24,425 original tweets, then results mapped onto the full 70,110 data set
RQ3: Network Analysis	retweet network analysis (Figures 5–7)	70,110 tweets, including retweets

Note. The initial keyword-based collection yielded 335,221 tweets: 68,596 in Dutch, 109,270 in German, and 157,355 in Spanish. After data cleaning, the final analytical data set consisted of 70,110 climate-migration-related tweets: 27,222 in German, 13,126 in Dutch, and 29,762 in Spanish. Of these, 24,425 were original, non-retweet tweets. The qualitative framing analysis used a manually coded sample, while

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the thematic and network analyses used the relevant full data sets specified above. Additional methodological details and example tweets are provided in the Supplementary Material.

Results

Climate Migration Frames on X

We first examine whether climate migration on X reproduces the victim and threat frames identified in legacy media research or whether additional frames emerge in this platformed environment. Table 2 reports the results of the manual framing analysis of 3,386 tweets. As discussed in the Methods section, many tweets did not contain a sufficiently clear frame of climate migration itself. Some only shared headlines, stated factual claims, made ambiguous jokes, or mentioned climate-related mobility as one possible consequence of climate change without problematizing it directly. We therefore distinguish between unframed or weakly framed tweets and tweets that clearly framed climate migration. Among the framed tweets, victim and threat frames remained the two most common categories, while the bogus frame formed the third major frame. Adaptive agent and political subject frames appeared only rarely ($n < 3$ for each) and were therefore excluded from the final comparison.

Table 2. Distribution of Climate Migration Frames by Language and Period (Counts and Column Percentages).

Frame	2015 DE	2015 ES	2015 NL	2019 DE	2019 ES	2019 NL	2023 DE	2023 ES	2023 NL	Total
Bogus	22 (12.6%)	0 (0.0%)	33 (22.9%)	96 (43.0%)	8 (5.7%)	65 (43.0%)	67 (28.6%)	17 (12.2%)	59 (31.7%)	367 (24.5%)
Threat	64 (36.6%)	30 (28.3%)	53 (36.8%)	63 (28.3%)	47 (33.3%)	45 (29.8%)	88 (37.6%)	34 (24.5%)	62 (33.3%)	486 (32.4%)
Victim	89 (50.9%)	76 (71.7%)	58 (40.3%)	64 (28.7%)	86 (61.0%)	41 (27.2%)	79 (33.8%)	88 (63.3%)	65 (34.9%)	646 (43.1%)
Total	175 (100.0 %)	106 (100.0 %)	144 (100.0 %)	223 (100.0 %)	141 (100.0 %)	151 (100.0 %)	234 (100.0 %)	139 (100.0 %)	186 (100.0 %)	1,499 (100.0 %)

The victim and threat frames partly reproduce patterns identified in legacy media research. The victim frame presents climate migrants or climate refugees as vulnerable populations affected by droughts, floods, sea-level rise, conflict, poverty, or other climate-related pressures. It emphasizes suffering, displacement, responsibility, protection, legal recognition, and humanitarian obligation. The threat frame, by contrast, presents climate migration as a problem for receiving societies, welfare systems, borders, security, or cultural cohesion. It often emphasizes numbers, future movements, pressure on Europe, and the difficulty of managing large-scale migration.

Although politically different, these frames can overlap (Figure 2). Both may rely on alarmist projections, uncertain estimates, and mass-mobility imaginaries, including references to "millions" or

"billions" of future climate migrants. In this respect, X partly reproduces the representational tensions identified in earlier climate migration scholarship: Humanitarian and securitized framings may be normatively opposed while still sharing a crisis-oriented vocabulary of population movement (Bettini, 2013; Bonneux & Van Praag, 2024; Ransan-Cooper et al., 2015). Moreover, X discourse differs from the patterns reported in legacy media and policy studies because political subject and adaptive agent framings are extremely rare (Baldwin & Fornalé, 2017; Munoz, 2024; Ransan-Cooper et al., 2015; Sakellari, 2021).

The main departure from legacy media research is the bogus frame. This frame denies the legitimacy of climate migration by presenting it as fake, exaggerated, opportunistic, or politically manufactured. It appears in several variants. Some tweets construct migrants as opportunistic actors, describing climate refugees as "fake refugees," economic migrants, welfare seekers, or "fortune seekers" relabeled through climate discourse (Figure 2). These tweets use two main discursive strategies. The first attributes deception to elites, especially Green parties, left-wing politicians, NGOs, the European Union, or the United Nations, accusing them of inventing or exaggerating climate migration to justify immigration, climate policy, or moral pressure on European publics. In some cases, this strategy connects to replacement-style or nativist claims, presenting climate migration as a cover for demographic transformation, open borders, or the weakening of native populations. The second strategy shifts blame onto migrants themselves, presenting climate refugees as opportunistic economic migrants, welfare seekers, or "fortune seekers" who use climate discourse to gain entry or protection. This strategy sometimes draws on climate denialism: If climate change is treated as fake, exaggerated, or politically manipulated, then climate migration is also dismissed as impossible or fraudulent.

The bogus frame is distinct from threat framing, although both can be hostile to climate migrants. The threat frame treats climate migrants as a real danger caused or intensified by climate change. The bogus frame questions whether climate migration or climate refugees exist as legitimate categories at all. Nor can it be reduced to climate denialism, although it often draws on climate-skeptical claims. Its distinctive feature is the combination of climate skepticism with a migration-centered and nativist accusation: Climate migration is presented as a category invented or exaggerated to expand immigration, create new refugee rights, weaken borders, burden taxpayers, or harm native populations.

In this frame, climate skepticism functions as a resource in a broader anti-refugee repertoire. The frame becomes distinctive when disbelief in climate change or climate-related mobility is connected to accusations against migrants, Greens, NGOs, the European Union, the United Nations, or other alleged elites. In this sense, the bogus frame resolves the paradox in right-wing climate migration discourse (Randall, 2017): Social media actors do not need to accept climate change to mobilize against climate migration as a migration issue. They can reject both climate change and climate migration by treating the latter, and sometimes also the former, explicitly as an elite invention designed to import unwanted migrants. The bogus frame functions as a flexible conspiratorial frame that makes climate migration useful to actors seeking to connect anti-climate-policy, anti-migration, and anti-institutional grievances.

The distribution of frames (Table 2) varied strongly by language and year. The victim frame was dominant in Spanish-language tweets across all three periods, always accounting for more than half of framed tweets. German- and Dutch-language debates were more mixed and at times followed the opposite

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pattern. In 2015, before the Alternative for Germany (AfD) had fully consolidated its social media presence (Serrano et al., 2019), frame distributions were more similar across language groups, with victim and threat frames both prominent. In 2019, the bogus frame became the largest category in both German and Dutch tweets, reaching nearly half of framed tweets in each language, while remaining marginal in Spanish tweets (5.7%). This suggests the 2019 backlash against Green politics became especially visible in social media discussions of climate migration. In 2023, like the broader topic itself, the bogus frame declined compared with 2019 but remained substantial in German (28.6%) and Dutch (31.7%) tweets while gaining ground among Spanish-language tweets (12.2%).

Figure 2 visualizes the vocabulary of framed tweets by plotting the 200 most frequent terms according to their normalized association with victim, threat, and bogus frames, with 40 terms labeled for readability. The plot shows that victim and threat framings partially overlap around crisis-oriented language, including terms such as "million," "billion," "future," "water," "drought," "flood," "extreme," "catastrophe," and "consequences." These terms point to shared imaginaries of large-scale displacement, vulnerability, and future crisis. The bogus frame, however, is organized around a different emphasis. Terms such as "nonsense," "Greens," "EU," "economic," "fortune," "politicians," "power," "money," and "government" indicate skepticism toward the legitimacy of climate migration and accusations of political manipulation. In this frame, alarmist language itself is often reframed as propaganda: Claims about climate emergency, future displacement, or millions of refugees are treated not as warnings, but as fearmongering used by political elites to justify migration or climate policy. Terms referring to economic interests and political power are also emphasized as alternative explanations for climate migration debates in media and politics. The plot therefore supports our qualitative coding by showing how the bogus frame weaponizes anti-alarmist critique for nativist and antielite purposes and distinguishes itself through its vocabulary.

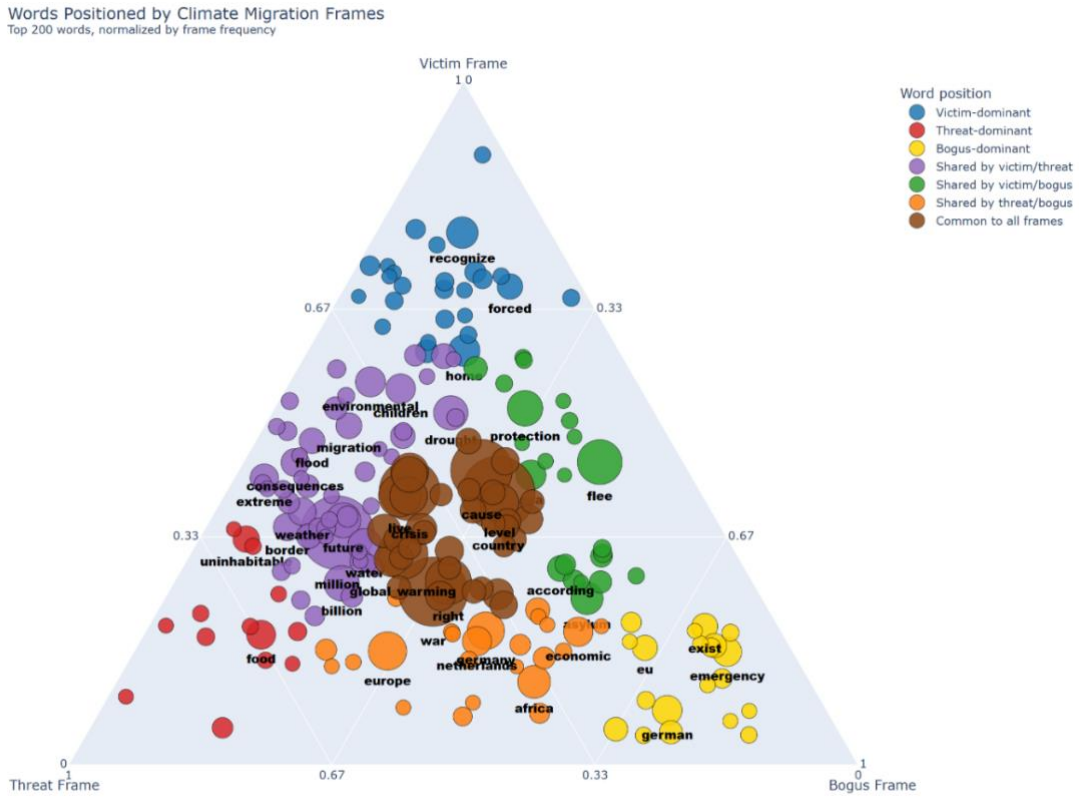

Figure 2. Ternary plot of word associations across climate migration frames.

Note. An interactive version of this plot, displaying all labels and counts, is available at https://osf.io/d9j3v/.

Thematic Contexts of Climate Migration Discourse

The thematic analysis (Figures 3 and 4) shows that frames appear in distinct thematic contexts. The clearest pattern is the concentration of German-language debate around political contestation, especially in 2019 and 2023.

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Count & Percentages	Theme Label & Description	Theme Representation	Count & Percentages	Theme Label & Description	Theme Representation
Total: 17,650 (23%) DE: 3419 (13%) NL: 3005 (22%) ES: 11,226 (31%) 2015: 1,742 (27%) 2019: 6,746 (21%) 2023: 9,162 (24%)	**Regional Hotspots & Cases** Regional Hotspots & Cases: Covers concrete places, cases, and media reports of climate migration, including Spain and Southern Europe, Africa-to-Europe debates, Syria, Bangladesh, Tuvalu, Mexico, Central America, Latin America, Australia, India, and island states. It is the largest theme overall and especially dominant in Spanish-language tweets, where climate migration is often discussed through drought, desertification, displacement, and regional vulnerability.	spain, hotspot, madrid, barcelona, iberia, mexico, america, climate refugees, drought, country, documentary, latina, america latina, guatemala, honduras, syria, dw, climate crisis, bangladesh, southern, spanish, catalonia, peninsula, coast, heat, drought, government, canaries, spanish climate, iberia peninsula,	**Total: 3,064 (4%)** DE: 596 (3%) NL: 625 (5%) ES: 1,843 (5%) 2015: 121 (2%) 2019: 1,334 (4%) 2023: 1,609 (4%)	**Climate Justice & Responsibility** Covers tweets linking climate migration to justice, responsibility, inequality, and collective action. Many posts promote awareness-raising, events, activist campaigns, religious or NGO appeals, and calls to address climate change as a driver of displacement. At the same time, the theme also includes ridicule and criticism from political opponents, who mock climate activism, reparations, guilt narratives, or responsibility claims. Thus, it captures both climate-justice mobilization and backlash against it.	fridaysforfuture, vatican, caritas, caritas internationalis, north, responsibility, guilt, victims, our fault, guilty, demands, demand, solutions, justice, environmental, millions, crisis, plaza, friday, water, wars, cause, responsible, pope, cop21, eu, west, way of life, science, forgotten, north, south, inequality, social, movements, equity, vulnerable
Total: 15,562 (20%) DE: 12,548 (46%) NL: 2,578 (19%) ES: 436 (1%) 2015: 199 (3%) 2019: 9,953 (31%) 2023: 5,410 (14%)	**Political Contestation** Captures party-political and ideological disputes around climate migration, especially in German-language tweets and, to a lesser extent, Dutch debates. Topics include Greens, AfD, EU policy, climate passports, asylum proposals, Carola Rackete, Greta Thunberg, energy costs, and anti-Green backlash. This theme is particularly prominent in 2019 and 2023 and often links climate migration to populist, anti-elite, and anti-migration claims. Some tweets also reject climate change itself, linking doubts about "climate refugees" to broader climate denialism.	greens, climate emergency, afd, carola rackete, eu, climate protection, german passport, claudia roth, climate pass, asylum, borders, automatic asylum, citizenship, cdu, fvd, vvd, svp, marrakech, climate catastrophe, co2, costs, money, war, future, left-wing, right-wing, political, plan, demand, climate crisis	**Total: 2,992 (4%)** DE: 1182 (4%) NL: 219 (2%) ES: 1,591 (4%) 2015: 899 (14%) 2019: 908 (3%) 2023: 1,185 (3%)	**Legal Recognition & Protection** Focuses on debates over whether climate refugees should receive legal recognition, asylum, or protection under international law. Topics include the legal void around climate refugees, the Kiribati/Ioane Teitiota case, the Tuvalu–Australia agreement, asylum law, and calls for new protection frameworks. While many tweets are rights-oriented, others reject or ridicule such recognition, making this a contested rather than purely supportive theme.	protection, recognition, legal, international, asylum, legal status, category, definition, refugee rights, rights, geneva convention, refugee convention, international law, international legislation, legislation, climate legislation, climate protection, legal limbo, tuvalu, kiribati, australia, new zealand, island state, residents, inhabitants, land, country, deports, expelled
Total: 9,070 (12%) DE: 684 (3%) NL: 1,415 (11%) ES: 6,971 (19%) 2015: 1,007 (16%) 2019: 4,347 (14%) 2023: 3,716 (10%)	**Drivers & Consequences** Focuses on climate change as a cause or amplifier of migration. It is especially prominent in Spanish-language discourse, where tweets more often discuss climate migration as a material consequence of climate impacts rather than mainly as a partisan controversy. Generally the emphasis is on the complex ways climate causes human mobility and its harmful effects.	water, poverty, diseases, extreme events, sea level, sea level rise, droughts, conflicts, floods, disasters, environmental change, consequences, effects, increase, changes, countries, the netherlands, planet, lack, deserts grow, costs, war, future, connection, impact, displacement, population, ipcc	**Total: 2,242 (3%)** DE: 53 (0.2%) NL: 19 (0.1%) ES: 2,170 (6%) 2015: 759 (12%) 2019: 919 (3%) 2023: 564 (1%)	**Ongoing Climate Displacement** Emphasizes climate migration as an already unfolding reality rather than only a future risk or complex discussions about causes. It includes public-facing news, commentary, and political discussion about current displacement linked to climate-related disasters. Topics include record displacement figures, displaced children. These tweets focus on recent stories and reports, and are most visible in Spanish-language discourse.	millions, began, started, already begun, war, conflicts, economic factors, effects, disasters, droughts, homes, crisis, 2018, 2019, report, warnings, countries, communities, displacement, displaced, figures, news, health, fires, hunger, abandon homes, natural disasters, climate disasters, deaths, thousands dead, losses, increase, violence, hurricanes, protection, adaptation, reality
Total: 8,988 (12%) DE: 4,095 (15%) NL: 2,093 (16%) ES: 2,800 (8%) 2015: 751 (12%) 2019: 3,976 (12%) 2023: 4,261 (11%)	**Future Projections & Mass-Mobility Scenarios** Covers forecasts and warnings about future climate migrants or refugees, often using large numbers such as 143 million, 200 million, or 1 billion by 2050. Topics include World Bank and UN projections, mass influx fears, border walls, children's futures, and Europe's capacity to host displaced people. This theme appears across all three languages and often carries alarmist or crisis-oriented tones.	millions, 2050, 1 billion, 2030, 2100, future, projections, forecasts, estimates, world bank, un, billion, expected, could become, years ahead, consequences, earth, world, borders, children, grandchildren, money, accommodation, space, secure borders, prevent, soon, crisis	**Total: 2,082 (3%)** DE: 515 (2%) NL: 126 (1%) ES: 1,441 (4%) 2015: 226 (3%) 2019: 663 (2%) 2023: 1,193 (3%)	**Expert & Institutional Discourse** Covers more formal posts by or about academics, NGOs, international organizations, policy forums, COP-related discussions, and institutional reports. These tweets often discuss climate migration through technical, legal, or policy language, emphasizing multi-causality, governance, human mobility frameworks, and international responsibility. It is a smaller theme with more conceptual and formal rhetoric and is most visible in Spanish-language discourse.	mobility, human mobility, environment, un warnings, iom, international, regional, national, framework, definition, rights, debate, forum, conference, panel, workshop, lecture, research, project, dialogue, organization, development organizations, agenda, event, cop21, cop25, cop28, caribbean, panama, gender, security, adaptation
Total: 5,103 (7%) DE: 2,812 (10%) NL: 2,194 (17%) ES: 97 (0.3%) 2015: 532 (8%) 2019: 1,881 (6%) 2023: 2,690 (7%)	**Conceptual Contestation** Includes tweets that question, reject, mock, or debate the label "climate refugee" and related terms. It is concentrated almost entirely in German- and Dutch-language tweets. Some posts raise legal or definitional concerns, but many frame climate refugees as economic migrants, fake refugees, or a politically invented category, making this theme closely connected to the bogus frame.	economic refugees, economic migrants, asylum seekers, war refugees, poverty refugees, fortune seekers, immigrants, term, word, expression, label, category, status, statute, recognition, legal status, exist, existence, nonsense, hoax, so-called, climate hysteria, climate policy, climate agreement, climate protection,			

Figure 3. Color-coded thematic distribution.

Note. The figure summarizes BERTopic-derived themes across languages and years. Percentages refer to each language or year subset, and theme labels and keywords were assigned manually after topic inspection. An expanded, full-size version is available at https://osf.io/d9j3v/. See the Methods section and Supplementary Material for details.

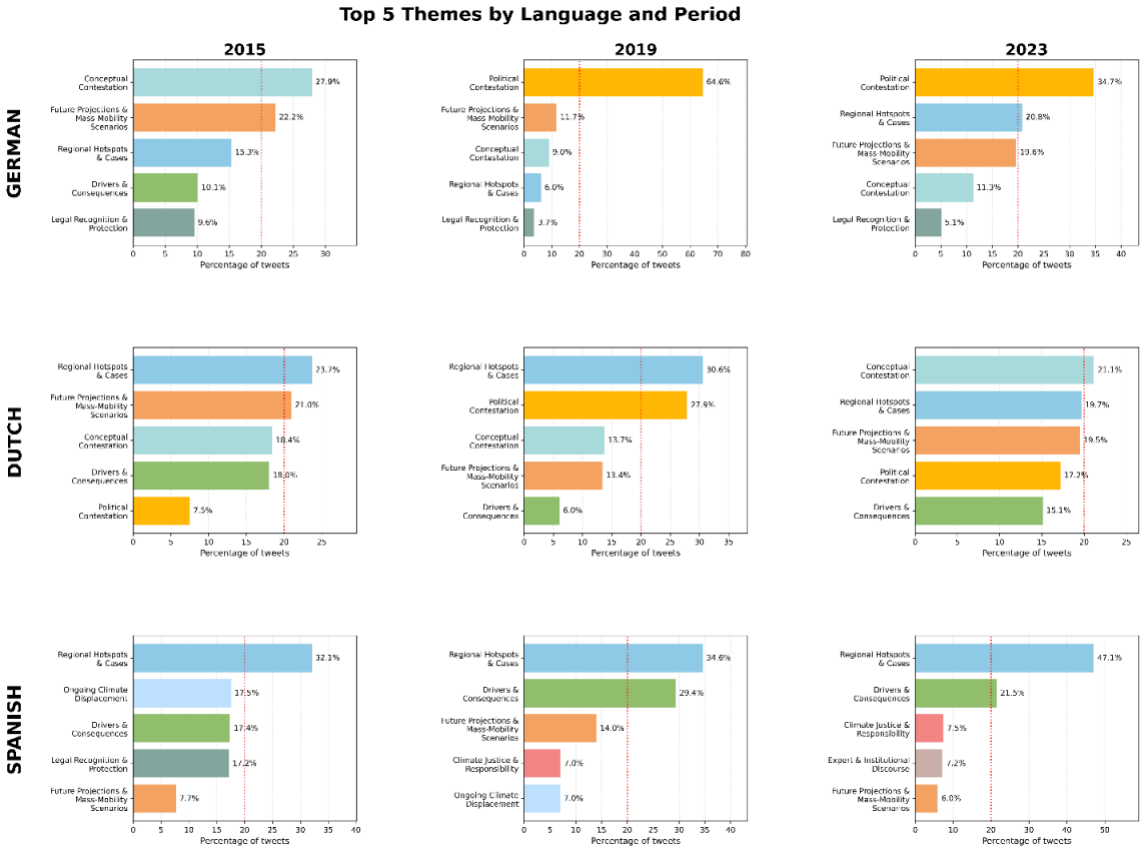

Figure 4. Dominant themes by language and year.

Note. Colors match Figure 3. The red dotted line marks 20% as a visual reference point.

In 2019, this theme accounted for almost two-thirds of German-language tweets, and it remained the largest German theme in 2023. Here, climate refugees were discussed through conflicts over Green parties, AfD communication, asylum policy, climate skepticism, EU politics, and the legitimacy of climate action. This created a thematic environment in which the bogus frame could circulate as part of broader anti-green and anti-migration backlash.

Dutch-language discourse occupied an intermediate position. It was not as overwhelmingly dominated by political contestation as the German debate, but showed strong and persistent contestation around the category of climate refugees. By 2023, conceptual contestation became the largest Dutch theme, while regional hotspots, future projections, political contestation, and drivers and consequences remained close behind. This indicates a more mixed, but still highly contested, environment, where climate migration was discussed as both a material issue and a disputed political category.

Spanish-language discourse followed a different pattern. It was consistently organized around regional hotspots and cases, drivers and consequences, and concrete examples of climate-related

displacement. By 2023, regional hotspots and cases became especially dominant, showing that Spanish-language tweets more often connected climate migration to drought, desertification, Latin America, Spain, the Global South, and current or potential sites of vulnerability. Smaller, but growing, themes such as climate justice and expert and institutional discourse also suggest a more formalized and responsibility-oriented discussion in later years.

The temporal patterns indicate that legal recognition and ongoing climate displacement were more visible in 2015, while political contestation sharply increased in 2019 and remained important in 2023, especially in German- and Dutch-language debates. Future projections and mass-mobility scenarios remained relatively stable across periods and languages, providing a recurring alarmist vocabulary of numbers, future displacement, and large-scale movement. Overall, the thematic results show that the bogus frame becomes most visible where climate migration is embedded in polarized debates about green politics, asylum, national identity, and distrust of climate policy, rather than in discussions centered on concrete climate impacts or regional vulnerability.

Networked Amplification and Visibility

The network analysis focuses on the German- and Dutch-language networks in 2019 and 2023 because these were the contexts in which the bogus frame and related themes, especially political contestation and conceptual contestation, were most visible. The Spanish-language networks were not similarly polarized and were more thematically dispersed around regional cases, drivers, and consequences. The German and Dutch cases therefore allow us to examine how climate migration became visible through polarized retweet structures and which actors were amplified (Figures 5 and 6).

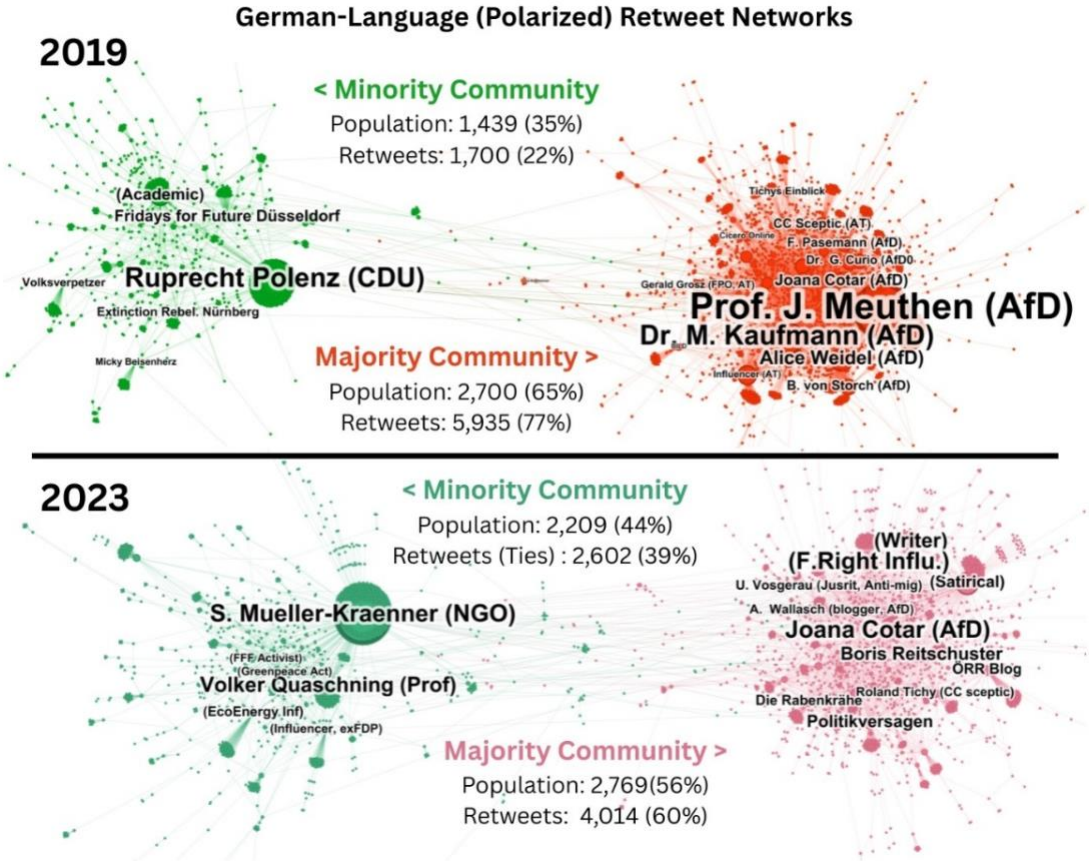

Figure 5. German-language retweet networks (2019–2023).

Note. The figure visualizes retweet networks of German-language climate migration debates on X. Nodes represent users; node and label size indicate retweet (by others) frequency. Accounts with fewer than 50,000 followers are identified only by descriptive labels in parentheses. See the Methods section and Supplementary Materials for details.

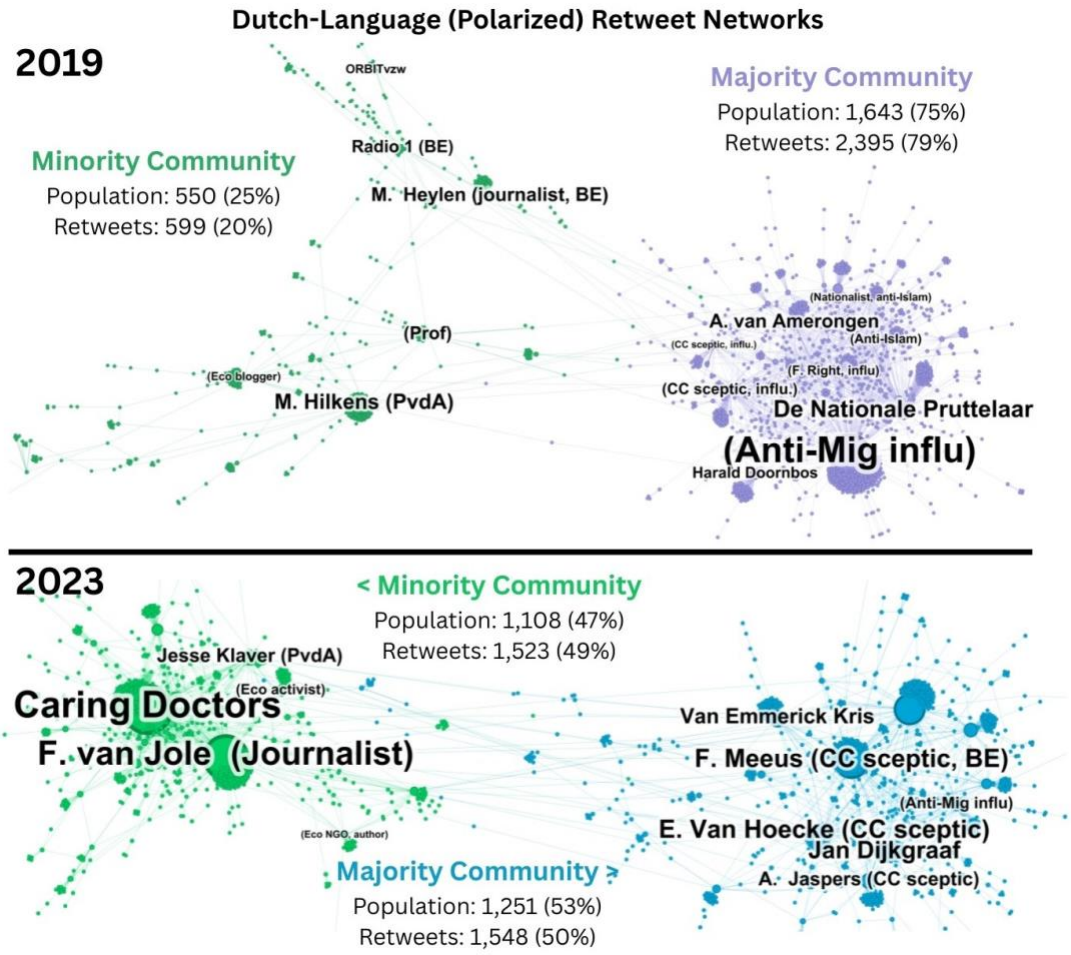

Figure 6. Dutch-language retweet networks (2019–2023).

Note. The figure visualizes retweet networks of Dutch-language climate migration debates on X. See Figure 5 for more information.

Figures 5 and 6 show that the German- and Dutch-language debates were organized around two main communities. The minority clusters were generally composed of climate-concerned, humanitarian, scientific, green, NGO, or refugee-rights actors. The majority clusters, by contrast, brought together populist politicians, climate-skeptical influencers, anti-migration commentators, and alternative media accounts. In the German networks, AfD-affiliated and AfD-aligned actors were especially visible in both 2019 and 2023. In the Dutch networks, the majority clusters were less party-centered but included many climate-skeptical and anti-migration influencers.

This does not mean humanitarian or rights-oriented framings were absent. Rather, they were concentrated in smaller or less amplified groups, including users outside the giant connected component

analyzed here. As a result, these tweets had lower networked visibility within the retweet structures that shaped the climate migration debate on X.

These communities did not merely differ in political position; they also differed in what they amplified. As Table 3 shows, the majority clusters were overwhelmingly associated with the bogus frame, while minority clusters were dominated by victim framing. This is important because the bogus frame was only the third-largest frame in the overall manual coding (Table 2) but became the dominant frame in the majority retweet clusters. In other words, the bogus frame was not the most frequent frame overall, but it became highly visible through larger and more cohesive communities that repeatedly amplified it.

Figure 7 further supports this interpretation. The in-degree distributions show that climate-skeptical and anti-migration actors (majority clusters) often received higher average retweet attention than the more humanitarian or climate-concerned actors, especially in the German networks and the Dutch 2023 network. This indicates that networked visibility was not simply a matter of how many users expressed a frame, but of how strongly particular influencers and messages were amplified.

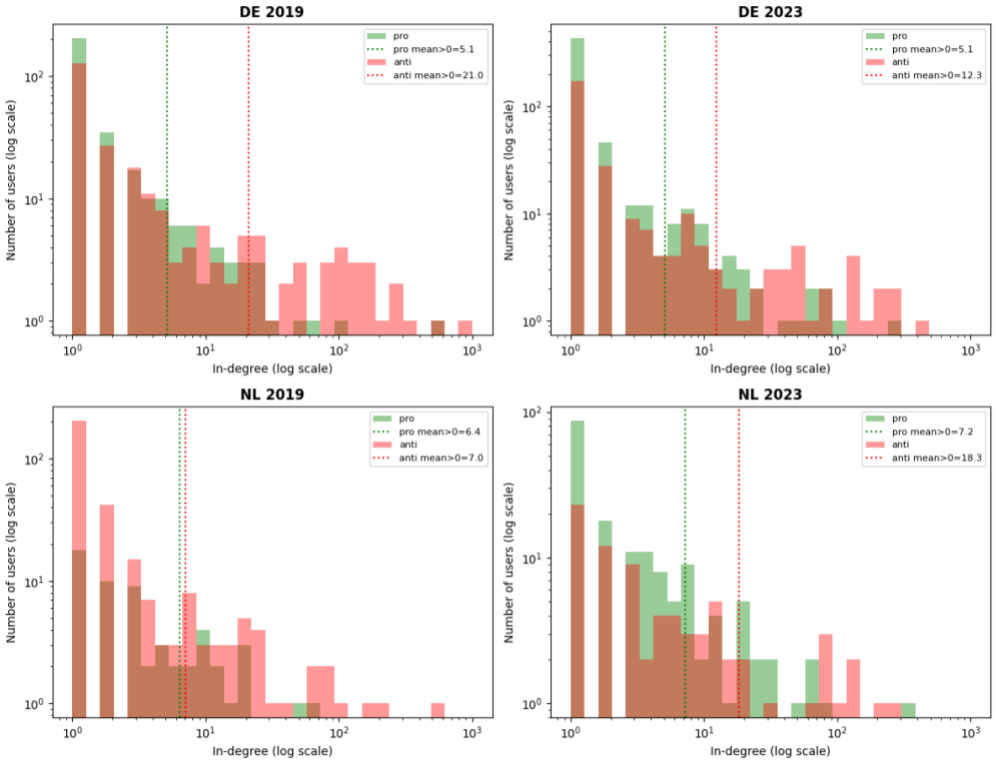

Figure 7. In-degree distributions in polarized retweet networks.

Table 3. Frame Distribution by Retweet Cluster.

Frame	Majority Cluster	Minority Cluster
Bogus	118 (84.3%)	12 (6.6%)
Threat	15 (10.7%)	46 (25.1%)
Victim	7 (5.0%)	125 (68.3%)

Note. Only coded tweets in the giant connected components of the polarized networks are included.

Taken together, these results show how the bogus frame functioned as a discursive bridge in online communication. It connected climate skepticism, anti-green resentment, anti-migration politics, and broader antielite grievances into a shared interpretive package. X's retweet-driven structure helped make this bridge visible and politically useful for populist and far-right actors. The bogus frame gained importance because it offered common ground around which different actors could coalesce, advancing anti-migration and anti-climate policy agendas while allowing conspiratorial claims to attach to them. This dynamic created an asymmetry in online visibility of climate migration.

Discussion and Conclusion

This study examined how climate migration is framed and amplified on X across German-, Dutch-, and Spanish-language debates. First, X partly reproduces established legacy media frames, but it also gives visibility to a distinctive frame that addresses a paradox in right-wing legacy media coverage of climate migration. Victim and threat frames are numerically prevalent, and both contain the alarmist rhetoric criticized in previous research. Although normatively opposed, both may rely on crisis-oriented imaginaries of large-scale population movement. At the same time, a distinctive bogus frame emerges on X and is also visible in far-right partisan digital media (Munoz, 2024). This frame presents climate migration as fake, exaggerated, opportunistic, politically manufactured, or a scam. Second, the thematic analysis shows that the bogus frame is especially connected to polarized discussions about climate migrants and refugees in wealthier European countries. In these debates, populist actors articulate nativist, anti-green, and anti-EU claims, particularly in the German- and Dutch-language data sets after 2015, with the frame peaking in 2019 amid an online backlash against global green policy movements. Third, the retweet network analysis shows these framings gain visibility through cohesive majority clusters in which populist, climate-skeptical, and anti-migration actors occupy central positions. These actors form a discursive alliance enabled by the bogus frame, gaining visibility and promoting far-right populist agendas to wider audiences. Finally, the bogus frame appeared across all three target languages and has become an important component of climate migration framing on X by 2023.

The main theoretical contribution of the article is to show how the bogus frame resolves a paradox identified in earlier research on right-wing media and climate migration. In legacy media, climate-skeptical or right-wing actors could mobilize climate migration as an immigration scare story only by partially accepting that climate change may produce migration (Randall, 2017). This created a tension: Accepting the climate-migration link risked strengthening arguments for climate action and humanitarian responsibility, while rejecting climate change weakened the credibility of climate-migration threat narratives. Earlier ecofascist or green-nativist arguments could address this tension by accepting climate

change while presenting migrants as environmental threats (Arghavan, 2023). By contrast, the bogus frame travels more easily on X because it does not require a coherent environmentalist position. It allows actors to reject both climate change and climate migration by treating the latter as an elite invention, thereby linking climate skepticism with nativist and anti-elite grievances.

Furthermore, this frame is especially suited to X because it compresses a complex policy issue into short, affective, and accusatory claims. In legacy media, and to some extent in other digital media environments, climate migration discourse remains shaped by editorial routines, reputational constraints, and expectations of evidentiary support. On X, by contrast, users can circulate fragments, jokes, insults, screenshots, hashtags, and sarcastic claims with limited contextualization. The bogus frame fits these affordances particularly well. It does not need to explain the complex relationship between climate change and mobility. It only needs to suggest climate migration is a scam.

Its visibility is further strengthened by networked repetition (Nangle & d'Haenens, 2026). Influential populist users and political actors can repeatedly circulate the same interpretive cues, turning climate migration into a symbol of anti-green, anti-migration, and anti-science backlash. The bogus frame therefore works not only as a claim about climate migration but also as a connecting device within broader far-right populist agendas and their online visibility strategies. Compared with more dispersed humanitarian communication, digital nativist discourse was more strongly embedded in cohesive retweet communities, influential accounts, and polarized issue networks. A frame therefore does not need to be the largest category to become politically consequential. On X, organized and highly engaged communities can make particular interpretations appear more central than their overall frequency would suggest. The bogus frame illustrates how platformed publics can distort issue salience by giving disproportionate visibility to certain frames.

Conceptually, the bogus frame is best understood as a discursive bridge among conspiratorial populist claims. It connects climate skepticism, anti-science rhetoric, anti-green backlash, welfare chauvinism, anti-NGO suspicion, and replacement-style migration anxieties into a single interpretive package. Climate denialism is an important resource in this frame, but the frame should not be reduced to climate denialism alone. A user may reject climate science without necessarily adopting an anti-refugee or nativist position. The bogus frame becomes distinctive when climate skepticism is joined to active anti-refugee claims: Climate migration is presented as a category invented or exaggerated to expand immigration, create new rights claims, weaken borders, burden taxpayers, or harm native populations. In this way, the bogus frame moves climate skepticism onto digital nativist terrain and invites users to view climate migration as part of a broader conspiracy against "the people."

This finding also complicates earlier critiques of climate migration discourse in media and policy. Critical scholarship has rightly warned against alarmist projections, speculative numbers, and racialized imaginaries of future mass movement from the Global South to Europe (Baldwin, 2022; Bettini, 2013; Boas et al., 2019). These critiques remain important because victim and threat frames on X still overlap around crisis-oriented language, large numbers, and mass-mobility imaginaries, yet the social media ecology adds another problem: Far-right and conspiratorial actors can appropriate critiques of alarmism as half-truths to deny climate migration altogether and advance nativist politics (Arghavan, 2023). Anti-alarmist language

can thus be detached from careful scientific critique and repurposed as a populist claim that any discussion of climate's effect on migration, or what democratic publics can do about it, is merely fearmongering, propaganda, or part of a pro-migration agenda. Climate communication must therefore do more than debunk alarmist narratives; it must also address how critiques of alarmism are appropriated by denialist and nativist actors to skew public debate.

The cross-language comparison suggests framing differences are shaped less by language itself than by the political and networked environments in which language communities are embedded. German- and Dutch-language debates were more nationally concentrated and more readily absorbed into post-2015 asylum politics, anti-green backlash, and right-wing populist mobilization. In these contexts, the figure of the climate refugee became a convenient object through which actors could connect climate skepticism, welfare chauvinism, opposition to green parties, and hostility toward asylum policy. Spanish-language discourse, by contrast, was more geographically dispersed across Spain and Latin America and more often connected to climate impacts, drought, development, and regional vulnerability. This does not mean Spanish-language debate was free of polarization or denialism, as the bogus frame also gained ground there, but it was less consistently organized around a single national anti-refugee cleavage, and the visibility of populist actors such as Vox was lower.

The political risk of the bogus frame is that it reduces climate migration to a conspiracy before any scientific, legal, or policy debate can emerge in online networks. Instead of debating how climate change shapes mobility, which responsibilities states have, or how protection and adaptation should be organized, the frame presents the issue as a cover for unwanted migration. It therefore organizes antipathy toward discussions of climate migration and toward climate policy. This strengthens populist actors that already claim ownership over migration issues and allows different skeptical or conspiratorial actors to attach their grievances to the same frame. Its flexibility is crucial: Climate skeptics, anti-vaccine users, anti-green campaigners, anti-migration actors, and nativist influencers can all attach their own grievances to the same claim. For climate communication, this means simply correcting misinformation is not enough. Institutions, NGOs, and journalists also need to anticipate how careful critiques of alarmism can be reframed as evidence that climate migration itself is a scam or part of a pro-migration agenda.

Finally, several limitations and directions for future research should be noted. X discourse cannot be treated as representative of public opinion, and the analysis is limited to three language spheres and three selected years. These choices were shaped by the costs and restrictions of data access after the commercialization of the X API, which also prevented the construction of a continuous long-term data set and contributed to the exclusion of English-language data. Future research should compare these findings with English and other language spheres using broader and more continuous data sets. The study should also be read in light of changes in X's governance after the platform's 2022 acquisition. These changes may have affected the 2023 platform environment, but our design does not allow us to isolate their influence. At the same time, the new platform conditions, including the abolition of the Academic API, weaker moderation, and the growth of misinformation and inauthentic content, suggest the dynamics identified here are unlikely to have disappeared and may have become more consequential (Hickey et al., 2025). In addition, the study focuses on textual tweets and retweet networks. It does not cover audiovisual media attached to messages, although these multimodal forms are part of political communication on X and may be especially important

for sarcastic, conspiratorial, or nativist framings. Future research should extend this analysis to multimodal climate migration discourse and compare X with other platforms, periods, and cases to assess whether this framing travels across different affordances, audiences, moderation practices, and sociopolitical contexts.

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