




Misinforming Latin America: narrative analysis of extreme weather in Brazil, Chile and Peru

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Executive Summary

Extreme weather events like floods, cyclones, wildfires, and heatwaves, are some of the worst catastrophes impacting societies, reshaping people's lives and landscapes as they pass through. Our research shows that actors including local politicians and their followers are using these events as opportunities to sow confusion and direct political and social energy away from progressive climate action. At a time when governments and communities most need access to reliable information, to enable action to reduce emissions and improve climate preparedness, they instead face misinformation across multiple platforms and from local leadership. This creates a significant danger that communities can become paralyzed by recrimination and conspiracy.

Accordingly, it is crucial that we understand how extreme weather events are exploited by various actors with diverse agendas, including by groups attempting to block efforts to mitigate global warming and adapt to extreme weather.

To better understand and distinguish these trends, this research analyzed the dynamics and trends of climate misinformation around extreme weather events in Latin America. We assessed fourteen extreme weather events which took place in 2022 and 2023, and selected three cases where misinformation narratives dominated the public discourse. The three events we reviewed were in Peru, Chile and Brazil, and while geographically distinct, they had similar characteristics, providing wider findings about the dynamics of mis- and disinformation as they relate to extreme weather in Latin America.

We sought to address the following question in relation to each case study:

- 1. What are the key misinformation narratives around extreme weather events?**
- 2. Who is sharing them?**
- 3. What do we know about those sharing mis- and disinformation? What are their affiliations, motivations, and connections?**
- 4. How widely and where does the misinformation travel?**
- 5. What tactics are being used by the propagators of misinformation?**

Case Studies

We reviewed fourteen different extreme weather crises in Latin America and found evidence of misinformation circulating in five. We chose three case studies for deeper analysis, that collectively provide readers with a variety of different hazards and locations, and in which the misinformation had significant reach and impact.

Brazil, 2023: “burst dam” narratives after flooding caused by a cyclone

In September 2023, the Brazilian state of Rio Grande do Sul was struck by a cyclone which caused extensive flooding, resulting in damage and loss of life in nearly 100 cities across the state. While local news sources described the flooding as a climate catastrophe, (Folha de S.Paulo, 2023) a false narrative quickly emerged claiming that the flooding had been caused by the opening of dam gates. It was propagated by local politicians as well as on WhatsApp and social media and reached at least 5.2 million people. In the fractured political environment of Rio Grande Do Sul, the debate around the dam emerged as a point of disagreement between left and right-leaning groups, distracting from the urgent need to put proper preparedness measures in place to limit damage from future floods.

Chile, 2023: Arson narratives around wildfires

Our analysis identified a very public debate among

Chilean political leadership. This included the false characterisation of arson as the single cause of the devastating wildfires, despite them having occurred during the longest drought in fifty years, and the scientific consensus that wildfires are becoming more frequent and extreme as a result of the climate crisis. One of the figures who propelled this narrative is Cristóbal Urruticoechea, a representative of the Republican Party of Chile for the Bío-Bío region, who made accusatory posts against arsonists on his social media. This obfuscation of the truth gained significant attention on social and traditional media, and from incumbent politicians, while distracting from the climate-related causes of the damage.

Peru, 2023: Cyclone Yaku and the HAARP Project

When Cyclone Yaku struck in early March, impacting over 10,000 people, a rumor emerged that the damage had been caused by the HAARP system. HAARP is an American research program that ran until 2014. It was designed to study the outer atmosphere and has long been subject to conspiracy theories, suggesting that it is involved in changing weather patterns. In the wake of Cyclone Yaku, a misinformation narrative emerged that another research center outside Lima called the Jicamarca Observatory, which was also built to study the outer atmosphere, had triggered the cyclone, within the larger HAARP program. As such, Cyclone Yaku became a “proof point” for those who believe that humans are altering weather patterns.

Key Conclusions

The characteristics of extreme weather events make them especially vulnerable to mis- and disinformation, because they are:

- 1. Highly visible:** The visibility of extreme weather events, both in terms of their impact on people's lives, and the media coverage they generate, makes them appealing opportunities for advancing certain agendas. In the case of Cyclone Yaku, the visibility of the destruction provides what could have been interpreted as a compelling "proof point" that HAARP alters the weather. Equally, local politicians in Chile and Brazil seized the opportunity to drive their agendas when the crises occurred.
- 2. Multi-causal:** We found this to be particularly significant for wildfires in Chile, where drought, poor forestry practices, extreme heat and some man-made incidents collided to create devastation. This complexity of cause enabled the framing of wildfires as a crime issue to successfully take hold, with a survey from February showing that 55% of Chileans think that the primary responsibility lies with "terrorist groups" (Diario Financiero, 2023). The multi-causal nature of events was less a factor in Brazil and Peru where the origin of the false narrative was a lie, rather than a framing issue.

- 3. Emotional and uncertain:** In each of these cases, the misinformation narratives apportion blame for destruction on a scapegoat, eliciting anger from local audiences. This process of scapegoating misdirects legitimate anxiety about threats presented by extreme weather, channelling energy and intention from mass audiences away from evidence-based conversations about climate change and eroding demand for solutions. The impact of this is to distract attention away from evidence-based conversations about the climate-related underpinnings of extreme weather, and the related responsibilities to execute appropriate mitigation measures, crisis preparedness and response.

Extreme weather events magnify existing dynamics and tactics

In each of the three cases, the misinformation narrative amplified and intensified existing narratives, rather than generating anything new. Arson in the context of wildfires and HAARP as a means to change weather are well-established tropes among climate denialists globally. While the "burst dam" debate in Brazil was a new misinformation narrative, the debate surrounding it was a manifestation of existing polarized political dynamics. In countries like Brazil and Chile, where political tensions run high, we saw extreme weather events being weaponized on the right and the left. One implication of this

is that any efforts to promote constructive civic engagement between sides should consider what will happen during situations of extreme weather, when existing tensions will be exacerbated.

Misattribution of the cause of the damage from these extreme weather events is at the heart of each of these narratives.

Each one involves a strategy of deliberately misattributing the true causes of events, such as falsely blaming intentional dam gate openings in Brazil, “terrorist” arson in Chile, and accusations of climate “manipulation” in Peru. These misleading narratives shift focus away from genuine climatic factors, clouding public understanding of the critical science behind climate change. This diversion could hinder the adoption of necessary climate action, as climate-related factors may not receive the attention they require in proposed solutions.

Many climate denialist or misinformation posts from Latin America which reference extreme weather do not refer to a specific event. This vagueness serves a purpose

During the exploratory phase, we found many posts which would list different extreme weather events together in one post, before making a statement about climate change. For example, *“So much nonsense.. go study a bit, research the history of the planet... we’ve had thousands of droughts and floods over the millennia... just over 30 years ago, Santa Catarina suffered from cyclones and was underwater.”* These posts cherry-pick information, while not being specific enough to be proven wrong. While they contribute significantly to the “noise” around climate change, our research suggests that misinformation narratives around extreme weather are more impactful when they revolve around a specific event.

Methodology

Our research process consisted of two distinct phases. First, we conducted an exploratory phase to identify our analysis framework and appropriate case studies. Our second phase consisted of deep dives into the three case studies shared in this paper. Across both phases, we drew on the following data collection tools:

Data	Collection method
X	Meltwater
TikTok	Manual & Junkipedia
Facebook & Instagram	Crowdtangle
News articles	Meltwater, manual searches

1. Phase one: We began phase one by establishing a process for identifying climate mis and disinformation. We adopted the Climate Action Against Disinformation definition (CAAD, 2023) and supplemented it with Cook’s 2019 compilation of tactics adopted by climate misinformation actors. These include: mischaracterization of global heating, misattribution of the cause, downplaying the impact of climate change, doubting regulations and attacks on the scientific consensus around climate change.

Using humanitarian sources and local news stories, we identified extreme weather events

that occurred in Latin America during 2022 and 2023. Many of these events were substantial enough to elicit a request for external support (CERF, 2023, Start Network 2023). A review of fourteen extreme weather events across the continent revealed misinformation narratives in five, the full list of those we reviewed is in annex two. Our cases were selected due to the relative reach of the narratives and in two instances, the involvement of high-profile individuals.

2. Phase two: In phase two we conducted in-depth narrative analyses. For each case, we had two lenses. The first was on the misinformation narratives themselves, looking at who was sharing them, their significance and impact. The second lens encompassed a broader analysis of the narratives related to the corresponding extreme weather event in each geographical area, such as narratives about flooding in Brazil, wildfires in Chile, and storms in Peru. This approach allowed us to gain a deeper understanding of how the misinformation narratives originated and the underlying dynamics that played a role in their development.

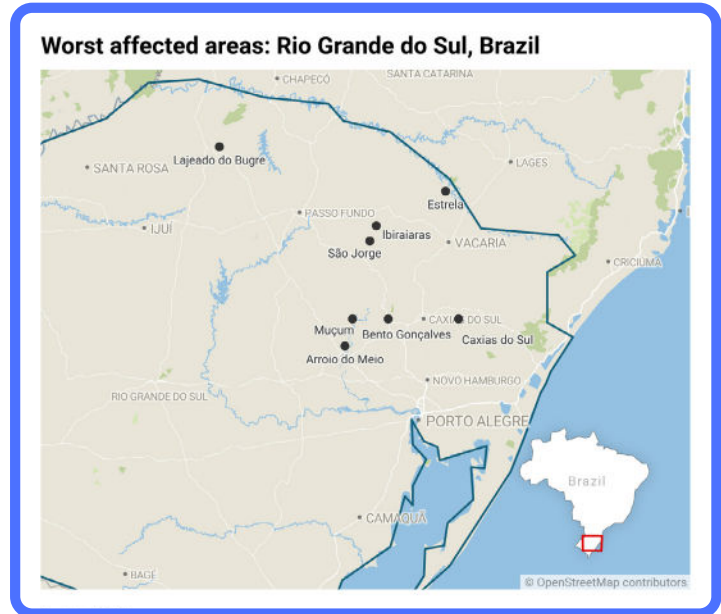


Brazil: Politics and polarization in Rio Grande do Sul

Brazil: Politics and polarization in Rio Grande do Sul

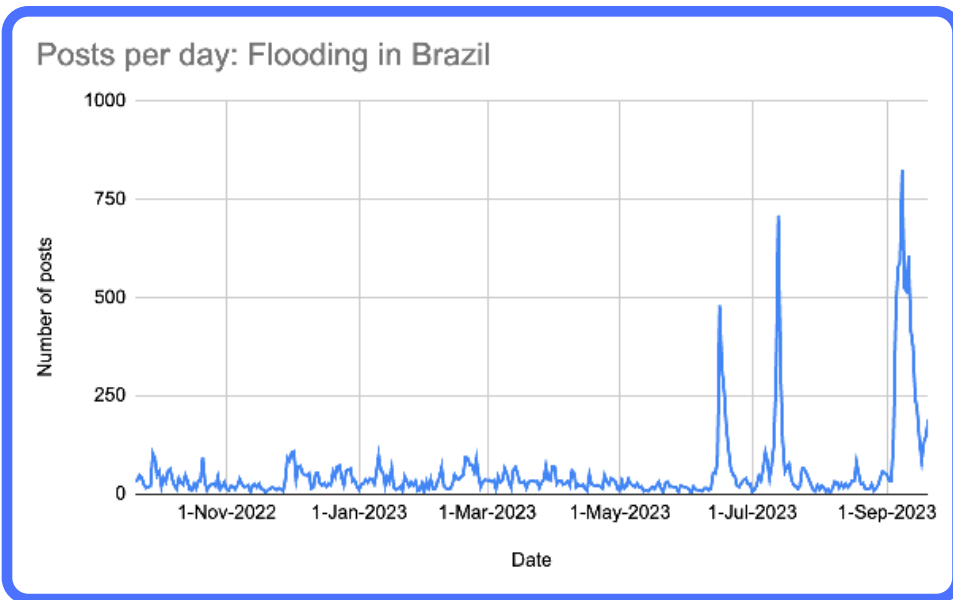
Summary

In September 2023, a cyclone struck the southern Brazilian state of Rio Grande do Sul, impacting approximately 100 cities. During the aftermath of this disaster, misleading posts emerged, falsely asserting that the floods were the result of three dams' gates being opened. This narrative gained traction when a prominent journalist and other right-wing figures amplified its reach, leading authorities to respond by debunking the false claims.



Misinformation narrative: the "burst Dams" of Taquari river

In September 2023, an extratropical cyclone developed in the ocean and swept across the southern region of Brazil. This led to over 40 fatalities in Rio Grande do Sul state, primarily due to flooding, landslides, and severe roof damage to homes. The cyclone caused storms and winds exceeding 100 km/h, impacting nearly 100 cities in the state and resulting in substantial damage. Simultaneously, there was a surge in online discussions related to the floods. This is indicated on the far right of the below diagram, which was developed from a Meltwater search extract, primarily consisting of posts on X, news sources and web forums:



While news sources labeled the flooding in Rio Grande do Sul a climate catastrophe (BBC, 2023 and Folha de S. Paulo, 2023), this event became the subject of opportunistic spreading of disinformation. Right-wing groups spread a mistruth, asserting that the damage was due to burst dam gates, in order to attack political opponents. The dams had been built by their opposition, the PT (Workers' Party) Government, which currently holds the presidency of Brazil with left-wing Lula.

The false narrative significantly infiltrated the online discourse about this extreme weather event. An examination of 66,800 posts on X and news portal comments related to floods, flash floods, and cyclones in Rio Grande do Sul revealed that 1,800 of them discussed the topic of dam gates, reaching over 5.2 million people. Videos spreading this narrative on YouTube and TikTok garnered hundreds of thousands of views, as illustrated below.

The false narrative began circulating on September 7, when the Bento Gonçalves city hall, under the leadership of Mayor Diogo Siqueira, of the PSDB party (center-right), publicly approached Ceran, the company running the dams, seeking information about its operations, including the "opening of the gates," as stated in a release to the media.

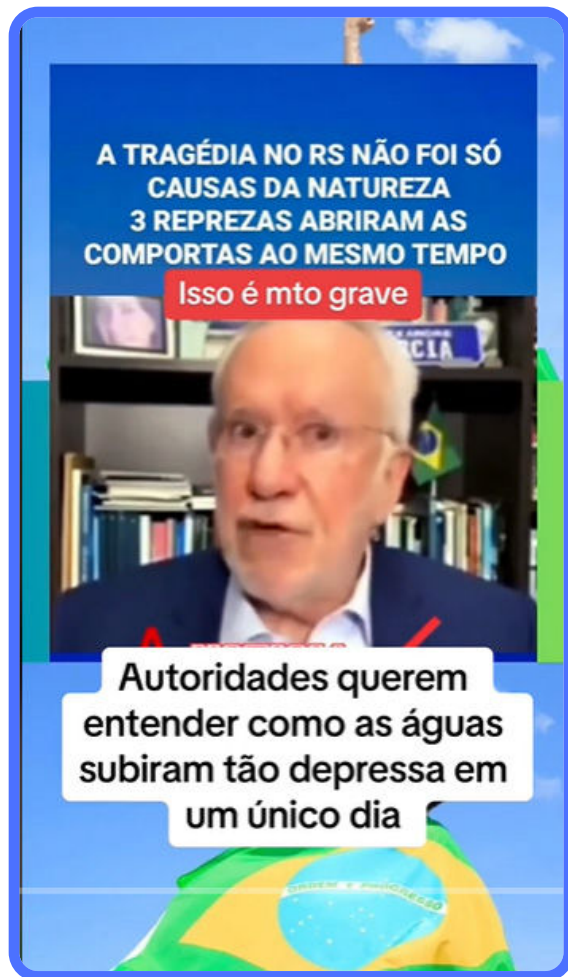
Ceran responded by clearly stating that there were no gates capable of changing the flow rate in the relevant structures and no evidence suggesting the dams had influenced the flooding (Ceran, 2023 and

Couto, 2023). This was confirmed by the state's Department of Environment, which identified a climatic event as the cause of the flood and saw no connection with the dams (Couto, 2023).

Mayor Siqueira has denied spreading misinformation, explaining that he reached out to the company because the flood "was not typical". He defended his actions, saying, "Is it forbidden to ask questions in Brazil? I need all the possible data. I'm not making any claims; I'm asking questions, looking for ways to prevent it from happening again. If someone uses this information in another context, it's not me who's doing it."

Additionally, conservative journalist Alexandre Garcia, who had a long career at the country's largest TV broadcaster before transitioning to YouTube, played a pivotal role in propagating the false narrative. On September 8th, appearing on the right-wing YouTube show "Oeste Sem Filtro", Garcia called for the dams to be investigated, saying *"It wasn't just the rain; the rain was the original cause, but during the Workers' Party government, contrary to environmental assessments, three small dams were built which apparently opened their gates at the same time"*

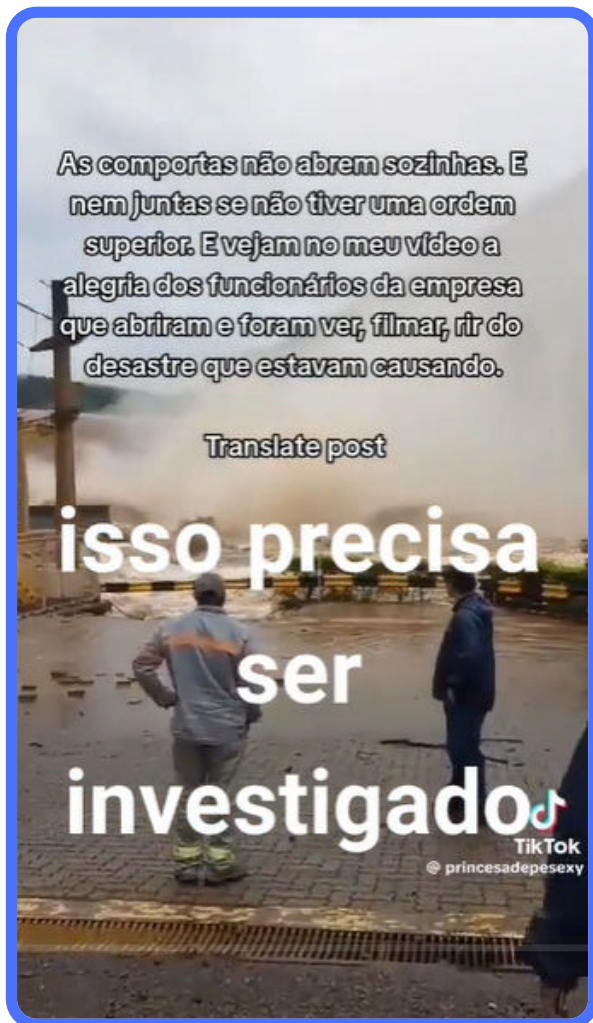
The original YouTube clip garnered more than 300,000 views and 54,000 likes. Garcia's statements quickly spread across social media and gained further traction through other videos that reiterated and strengthened the narrative. One such video on TikTok received over 290,000 views and was reposted thousands of times, accompanied by hundreds of comments that reinforced the video's false storyline. Re-packagings of Garcia's claims, like this, were seen hundreds of thousands of times according to platform metrics.



This post translates as:
 “The tragedy in Rio Grande do Sul was not solely due to natural causes. Three dams opened their gates simultaneously. This is very serious. Authorities are trying to understand how the water levels rose so rapidly in just one day”

Another widely-shared TikTok video implied that dam workers took pleasure in opening a gate and causing damage, suggesting a conspiracy that such actions were orchestrated by “higher orders.” Across various TikTok posts, this video accumulated over 234,000 views.

In the wake of the widespread circulation of Garcia’s video, on September 11th, Brazil’s Attorney General, Jorge Messias, announced his intention to request an investigation into Garcia for his role in promoting a “disinformation campaign”. In response, Garcia released a new video, downplaying his previous claims and emphasizing that he was merely advocating for an investigation. Then, on September 16th, the Attorney General’s Office issued an extra-judicial request that Alexandre Garcia publish a new video confirming that the dam gate story was a lie, on the same YouTube channel where he had initially made the controversial assertion (Advocacia-Geral da União, 2023). While this was not a legal obligation, it is likely that Messias would have forced Garcia through the courts had he not complied.



This post translates as: "The floodgates don't open alone or together unless there is an order from above. And see in my video the joy of the company's employees who opened it and went to see, film, laugh at the disaster they were causing. This needs to be investigated."

Subsequently, Garcia issued the following statement in which he retracted his previous comments

"The 3 plants are of the free spillway type, not having gates for water storage or retention for energy generation, therefore not controlling the water flow in the rivers. The Ministry of Mines and Energy regrets the politicization of the tragedy which, unfortunately, devastated cities in Rio Grande do Sul and brought immense suffering to countless families,".

This was preceded by a comment from Garcia explaining that the statement had been sent by the Attorney General, ensuring the audience is aware that it is not Garcia's new opinion on the matter. This appeared on the same Oeste Sem Filtro channel where the questions were initially raised about the dam gates; it garnered over 418,000 views, compared to the 305,000 views the initial video received.

In addition to the political wrangling in open social media channels and traditional media, an investigation conducted by the local newspaper “O Globo” unveiled widespread misinformation concerning the alleged opening of dam gates on WhatsApp. This misinformation was found in a database maintained by the company Palver, which monitors over 25,000 groups on the platform. A specific message, widely circulated since at least September 7 and reaching phones in Rio Grande do Sul, São Paulo, and Paraíba states, links the dam constructions to the administration of former President Dilma Rousseff (also from the PT party) in a derogatory manner, suggesting corruption (Couto, 2023).

It appears that hundreds of thousands of people watched videos that included false claims blaming the floods on corruption, error or conspiracy, rather than the uncommon intensity of the storm which scientists predict will occur more frequently in our warming climate. This content spread across a range of channels including TikTok, WhatsApp, X, and traditional media within Brazil. The circulating narratives around the Rio Grande do Sul floods demonstrate how political polarization is intensified during a moment of crisis and that this can overshadow conversation around the actual causes of extreme weather. This diverts attention and energy away from implementing measures to mitigate climate impacts and the need for enhanced emergency preparedness.

Wider trends and narratives about flooding in Brazil

To better understand the context around this narrative, we analyzed 20,000 news and social posts. These were randomly sampled from a total of 66,800 posts and news stories about flooding in Brazil, between September 20, 2022, and September 20, 2023. These shed light on wider narratives around cyclones, floods, and inundations before, during and after the Rio Grande do Sul narratives.

The prominent online narratives we identified showed a fractious political environment, marked by opportunistic attacks from both climate-supporting left-wing factions and climate-denying right-wing factions. Overall, we observed that discussion of extreme weather events was frequently a stage for political discussion and posturing.

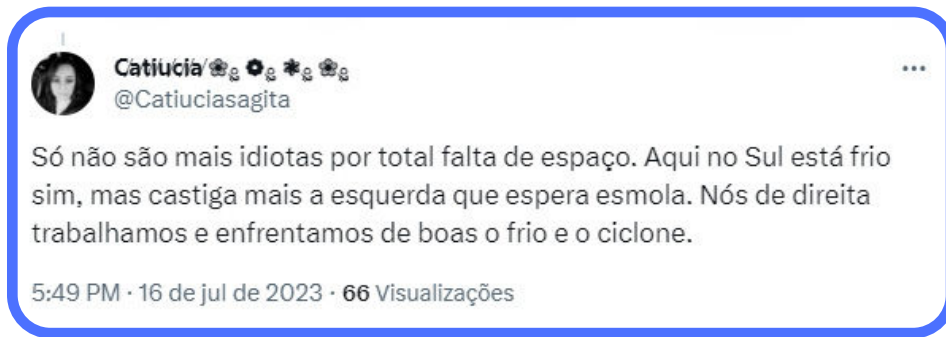
For instance, our analysis uncovered 522 mentions of the name Luiz Inacio Lula da Silva and 338 references to the term “president.” Many of these posts criticized Lula for opting to attend a G20 meeting in India instead of personally visiting the cyclone-affected region in Rio Grande do Sul to assess the extent of the damage.

Among the most engaging of these, with 13,580 engagements, came a post from a user claiming that Lula’s government allocated much less money to rebuilding cities devastated by the September cyclone than to the “luxurious trips” taken with the First Lady.

The country’s political divide became evident through the use of the term “Bolsonarista” in 51 mentions, referring to the followers of Brazil’s former president, Jair Bolsonaro. Although Bolsonaro is no longer in office, the fact that his name continues to be cited illustrates that both his supporters and detractors reference him in ongoing debates, even regarding events occurring after his administration. Bolsonaro and Lula serve as the figureheads of the two opposing poles in Brazil’s current political discourse.

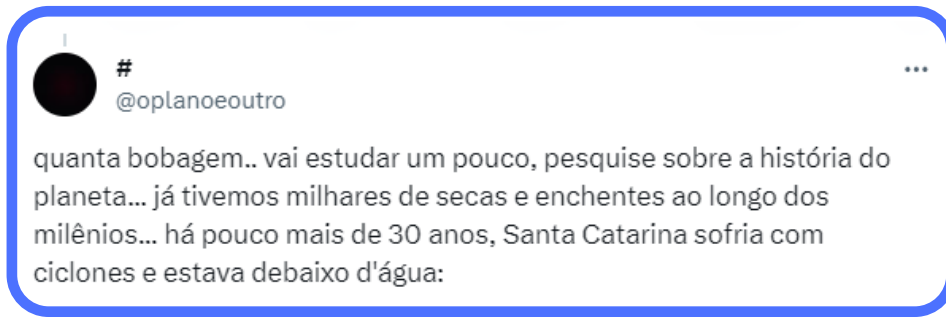
Another narrative related to storms and flooding depicted the other side of Brazil’s political divide, where users responded to a news article that seemingly joked about cyclones in Rio Grande do Sul being a form of punishment for the region’s substantial number of supporters of climate change denier Jair Bolsonaro.

Bolsonaro’s supporters expressed their frustration over a newspaper article, discussing another cyclone in July in Rio Grande do Sul, which predominantly supports the far-right ex-President. With the title “Climate change punishes Bolsonaro’s voters in the South”, the text was criticized because its title implies that suffering from the natural disaster was a punishment for their climate denialism. This post from a supporter of the former President rebutting the idea that extreme weather is a punishment.



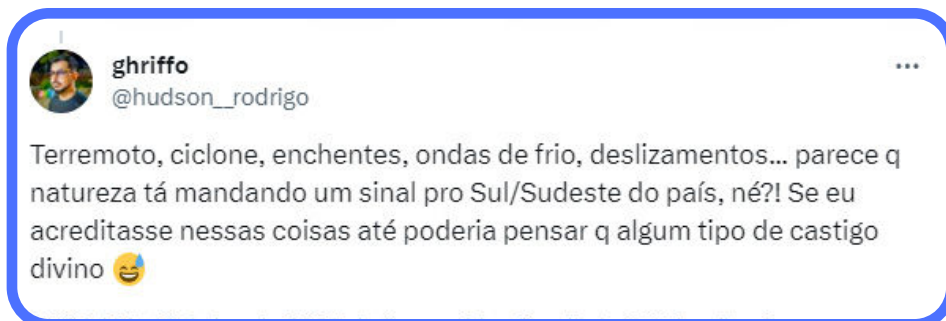
This post translates as:
“They are not bigger idiots simply due to lack of space. Here in the South, it’s cold indeed, but it punishes the left more who wait for alms. We, the right-wingers, work and face the cold and cyclones just fine”

In the Folha de S.Paulo newspaper post on Twitter, a user responds with the common argument that extreme weather phenomena have always existed.



This post translates as:
“So much nonsense.. go study a bit, research the history of the planet... we’ve had thousands of droughts and floods over the millennia... just over 30 years ago, Santa Catarina suffered from cyclones and was underwater.”

This idea of a “divine punishment” in a region that largely supports the climate change neglecter Bolsonaro is also made in jest by other users.



This post translates as:
“Earthquake, cyclone, floods, cold waves, landslides... seems like nature is sending a signal to the South/Southeast of the country, right?! If I believed in these things, I might think it’s some kind of divine punishment,”

In our exploratory phase, we saw many more of these posts which list different weather phenomena without actually referring to an event.

Discussion regarding the significance of climate change was also reflected in the posts we analysed, although with much less frequency. Terms like “climate change”, “climatic” and “global warming” only appeared around 300 times within the 20,000 posts.

1,100 posts relate more directly to the humanitarian aspects of the crisis, referring to rescue, help, emergency and related terms. Many of these direct followers towards information on support initiatives for the affected regions, whether from different levels of government or from private entities. Additionally, these posts included messages from users expressing their grievances about the alleged lack of assistance from authorities.

The most engaging post, with 15,501 engagements, was the announcement by Rio Grande do Sul's Governor, Eduardo Leite, indicating his collaboration with the federal government to assist the victims of the September cyclone.

One user criticized that, “The amount of ill wishing the rest of Brazil is directing towards Rio Grande do Sul after these floods is degrading. This under the foolish and misguided justification that everyone here is a Bolsonaro supporter”.

Conclusions

In this case, the misinformation narrative around the flood was an amplification of existing political tensions. The narrative surrounding the dam gate openings appears to have been crafted to exploit a natural disaster, for the purpose of advancing unrelated political agendas. Its impact was twofold: it diverted attention from the climatic causes of the disaster and further inflamed existing tensions, all while attributing blame to a specific political group for the resulting devastation.

Within this polarized political landscape, those spreading the burst dam lie took the opportunity presented by this highly visible event to target the center-left administration. The narrative aligned with the prevailing tone of conversations about storms and flooding in Brazil, which our wider analysis show include a significant tendency toward assigning blame and finger-pointing. The fact that conservative politicians and influencers amplified this story underscores its connection to a broader network of right-wing extremism, climate denialism, and conspiracy theories.

The politicization of the extreme event is another symptom of the polarized atmosphere in Brazil, where every public debate devolves into

a battle between two diametrically opposed sides. This is exemplified here by the fact that the Attorney General stood in to compel Alexandre Garcia to correct his statements about the burst dam. This was successful in debunking this specific lie, but did not contribute to improving the health of the overall information ecosystem from which these narratives emerge. While exacerbating the tensions, it also diverted attention from more evidence-based conversations about how these events can be managed more effectively, and did not enable the public to understand the climate-related dimensions of these crises.

A final noteworthy aspect is that this narrative originated at the local level and subsequently gained national prominence. It is possible that this represents an example of the "illusory truth effect," wherein misinformation becomes more believable when repeatedly disseminated (Hassan and Barber, 2021). While residents may have initially harbored genuine doubts about the role of the dams in the flooding, over time, the narrative gained perceived credibility as it continued to circulate. The strong belief and support for this false narrative were evident in the numerous comments and accompanying text in the social media posts through which it spread.

Chile: Distraction and finger pointing in extreme drought



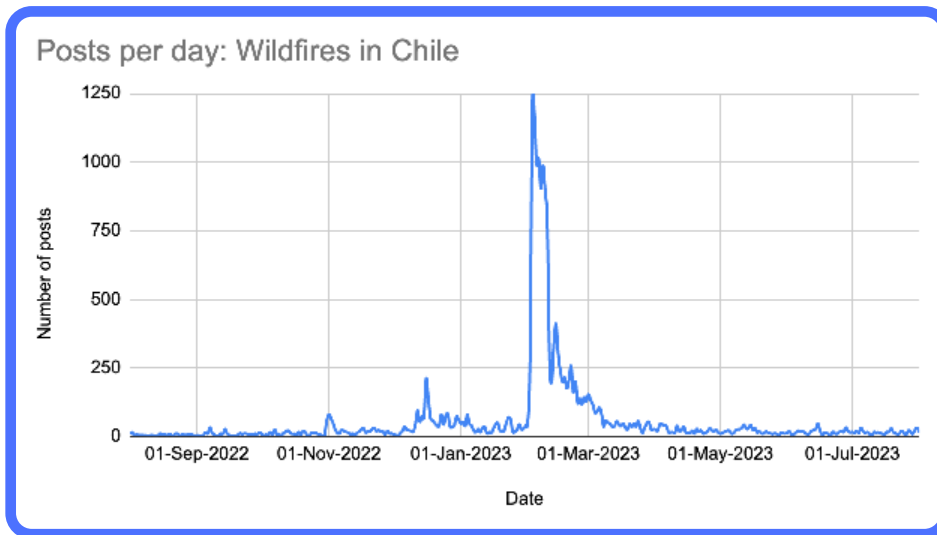
Chile: Distraction and finger pointing in extreme drought

Summary

In February 2023, a vast region in central-southern Chile experienced an exceptionally large outbreak of forest fires, comprising hundreds of individual fires and consuming hundreds of thousands of hectares. Several factors have been linked to this surge in fires, including the region's historical mega-drought, an extended heatwave, practices within the local agro-forestry industry, the influence of climate change (BBC, 2023 and Lizana et al, 2023), and inadequate fire management, including incidents of arson (Guzmán, 2023). Alongside the physical devastation, the February fires understandably triggered a significant increase in online discussions about wildfires, creating an opportune environment for the dissemination of misinformation.

The graph illustrates the daily mentions of wildfire-related terms in Chile and the affected regions on platforms such as X, news sources, and internet forums. The peak in mentions corresponds with the onset of February when the fires reached their zenith.





In the days and weeks following the fires, a narrative gained momentum on social media, with some politicians and others claiming that the fires' uncontrollable nature was largely attributed to the actions of "terrorist" arsonists. Similar to instances in Australia, the US, and other regions in recent years, these arsonist narratives overlooked the root causes of the fires' intensity and widespread impact, focusing on individual criminal acts rather than addressing the systemic issues at hand.

Misinformation narrative: Assigning blame for the fires

While Chile has experienced significant wildfire crises in the past, particularly in 2017, the fires in 2023 were notably extensive in terms of their size and duration. Occurring in the midst of a mega-drought that had persisted for 14 years, an extended heatwave began on January 30th, 2023, creating ideal conditions for forest fires in a vast region of central-southern Chile.

In early February, there were at least 406 individual fires, affecting an area of approximately 450,000 hectares. The most severely impacted regions were Ñuble, Biobío, La Araucanía, Los Ríos, Los Lagos, and Maule, as reported by the UN in April. The fires resulted in the tragic loss of twenty-six lives, and around 8,000 people suffered from the destruction of their homes and livelihoods. The police arrested 50 individuals for their alleged involvement in the fires (UN.org, 2023).

Chile: Distraction and finger pointing in extreme drought

A survey by Cadem, a consultancy, shows the extent to which wildfires are understood as a law and order issue, rather than a climate issue. Their data reveals that by the end of February, 93% of Chileans believed that the fires were intentionally set, with 55% attributing the primary responsibility to "terrorist groups" (Diario Financiero, 2023).

Discussion regarding the actions of arsonists is not unique to countries facing forest fires. A search through Meltwater revealed peaks in discussions about arson in the context of forest fires in Greece, Australia, the US, and Canada between 2022 - 2023.

To delve into this further, we conducted an analysis of a random sample of 20,000 posts from Meltwater, specifically related to wildfires in Chile in the year surrounding the February fires. There were a total of 56,100 posts concerning forest fires in Chile between August 2022 and August 2023. Among the posts analyzed, 184 mentioned "arsonists" or "terrorists." These posts reached over 1.5 million people and were shared by high-profile individuals and featured in mainstream media.

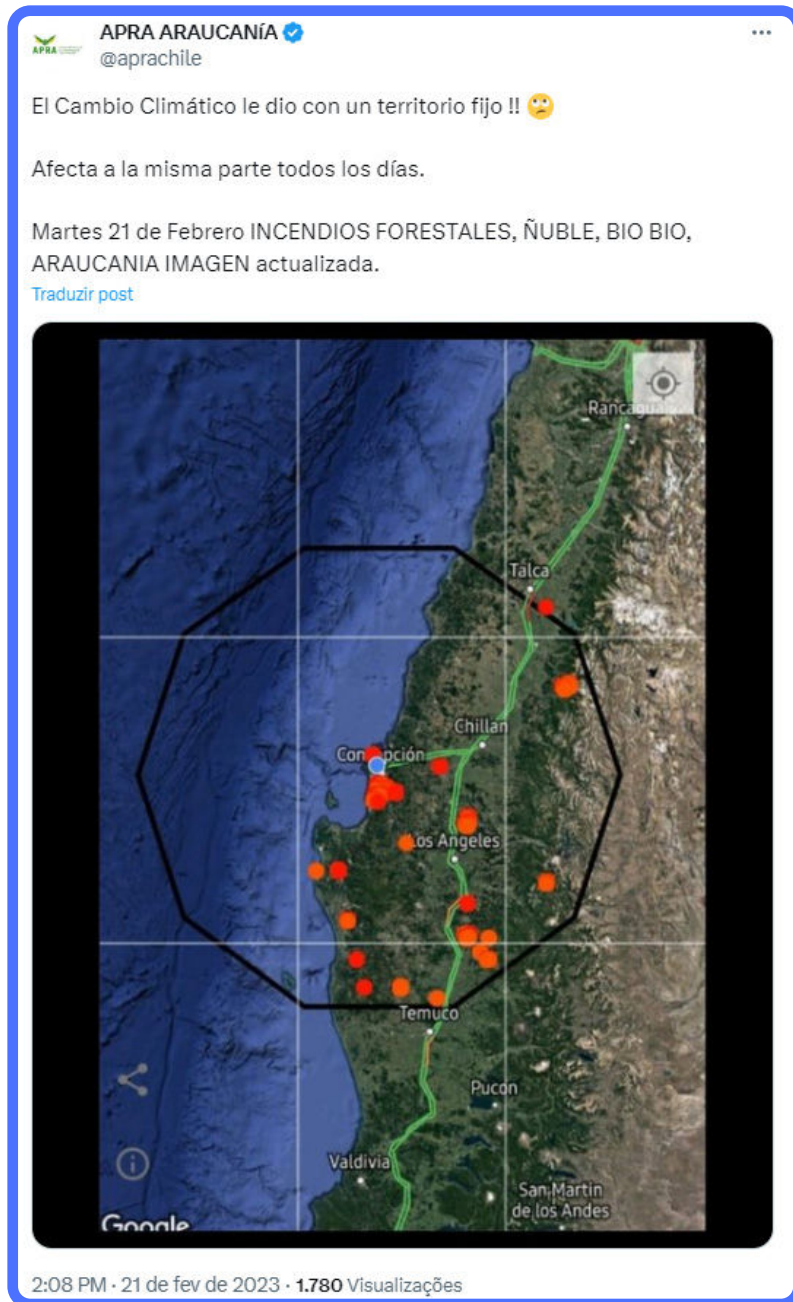


On their Twitter account, ApraChile claims that their aim is "to gather the largest number of direct victims of acts of terrorism." In our sample of 20,000 posts, we identified 22 posts from ApraChile, making them one of the most frequent posters, with an estimated reach of 142,400 followers.

Chile: Distraction and finger pointing in extreme drought

The post with the fifth highest engagement in our sample was a video from ApraChile's profile with 19,000 engagements. In the video, a firefighter reports that his men were threatened with death by Mapuche indigenous people when trying to bring water to a fire-affected region.

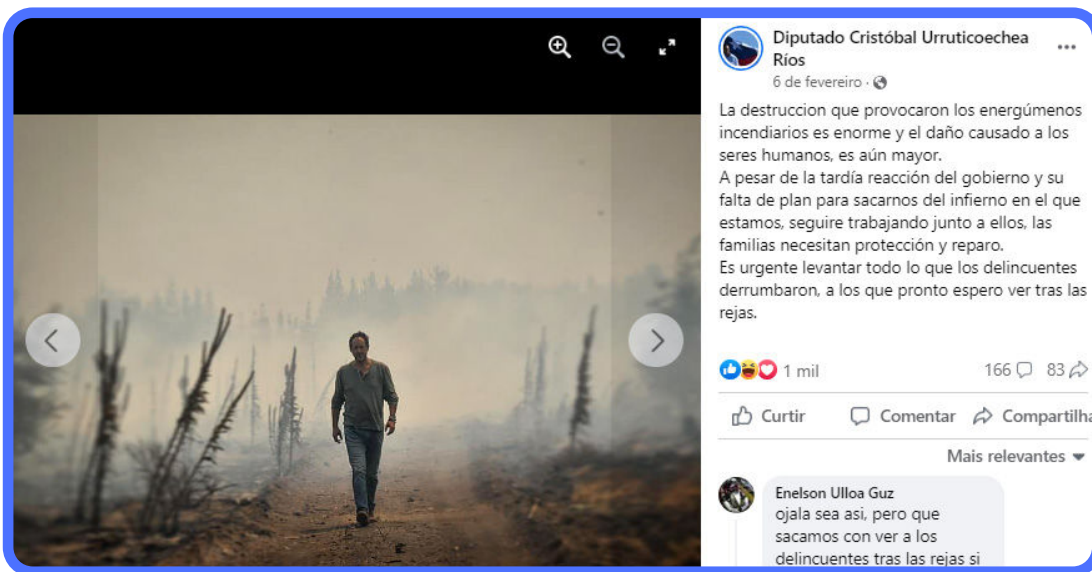
On February 23rd, the ApraChile Twitter account derisively dismissed the argument that climate change is responsible for the intensification of wildfires.



This post translates as:
"Climate Change has a fixed target!! 😏 It affects the same area every day. Tuesday, February 21st, FOREST FIRES, ÑUBLE, BIO BIO, ARAUCANIA."

Chile: Distraction and finger pointing in extreme drought

The notion that arsonists are primarily responsible for the fires is also espoused by various right-wing politicians. Cristóbal Urruticoechea, is a representative of the Republican Party of Chile for the Bío-Bío region, and associate of José Antonio Kast, an ultraconservative admirer of Augusto Pinochet, who nearly won the last Chilean presidential election. He was criticized for doing a photo-shoot, shown below, of himself in a devastated area, giving the impression that he was in some way assisting with the rescue. In the caption of the posts published on February 6th on Facebook and Instagram, where he has 32,000 followers combined, Urruticoechea attributed the fire to arsonists. His posts got more than 2,500 likes.



This post translates as: "The destruction caused by the arsonist thugs is vast, and the harm done to human beings is even greater. Despite the government's late response and their lack of a plan to pull us out of the hell we're in, I will continue working alongside them".

Urruticoechea is a well-known critic of the environmentalist movement. Therefore, framing wildfires as the work of "arsonists" serves as a convenient distraction from the climate-related issues that contributed to the severity of the fires. He has consistently raised this issue in Congress, as demonstrated by:

"The left and its globalist partners blatantly lie about what they call climate change or global warming. Their project that regulates the process of a just socio-ecological transition towards carbon neutrality is a farce." (Urruticoechea, 2023)

Chile: Distraction and finger pointing in extreme drought

In August 2023, the Bio-Bío region experienced heavy rains. Congressman Urruticoechea requested the central government to allocate emergency funds and deploy troops to assist in the region's recovery, which he represents. In the same month, he voted against and actively spoke against a bill titled "Adoption of Communicational Measures to Inform about Consequences of Climate Crisis and Chile's Ecological Overdraft." Despite his efforts, the measures were approved. This bill signifies a commitment to raising awareness among citizens regarding the country's consumption of more natural resources than it produces and its severe susceptibility to the climate crisis. The congressman, in his statement on the project, expressed his rejection of it.

“this new climate religion, which makes you anathema if you don't follow their globalist doctrine, where one of its priestesses, Greta Thunberg, says in one of her books that middle-aged heterosexual men are inadequate for the climate.”

Another example is conservative senator María José Gatica Bertin, who posted on her Facebook account on February 7th that "there are too many fire outbreaks, everything indicates that they are caused by people who only seek to cause harm."



This post translates as: "There are too many fire outbreaks, everything indicates that they are caused by people who only seek to cause harm."

While human actions contribute to many forest fires, other factors also play a role. The country faces its worst drought since 1950, which is linked to climate change. The proliferation of non-native species like pines and eucalyptus has replaced indigenous ones. The area's hilly geography accelerates wind speeds, leading to the rapid spread of fires. Additionally, factors like urban growth, reduced agriculture leaving flammable debris, and extensive forestry operations indicate long-term land mismanagement (BBC, 2023).

In the midst of a controversy over allegedly conflicting numbers related to the intentionality of the fires, the Minister of the Interior, Carolina Tohá, made a statement on February 23rd, stating that "it is not useful to continue this dispute" and urging everyone to verify the most accurate data on burnings on the National Forestry Corporation (CONAF) website.

"All the information is online, and for each fire, it states the initial observations made by the brigade members," Tohá added, explaining that the brigadiers, at first, make a note and opinion on what might have caused the fire. "There's a subsequent investigation, expert analysis, and a broader review. That investigation reaches a conclusion, and then it's definitively declared whether the fire was intentional or not. All of this information is available on the CONAF website," she detailed (T13, 2023).

"Instead of playing with numbers, let's invite citizens interested in this issue to check the CONAF portal, which also has historical data. The rest of us, let's focus on what concerns us," the minister concluded.

Looking beyond Chile, the arson narrative simply repeats debates already taking place in Australia, Canada and the United States about arson and wildfire, with no particular novel framing or content. The debate about arson, wildfires and climate change is burning globally.

A Meltwater search for the year preceding September 15th 2023 identified 95,700 posts globally related to arson and wildfires, which included 38,400 posts containing the term "climate change". These posts frequently emphasized the conflict between arson and climate-related explanations for the damage caused by wildfires, asserting that arson is the "true cause" of the damage. In 2023, these posts spiked in June, July, August and September when forest fires occurred in Alberta, Yosemite, Canada and Louisiana. This again shows how climate denialists can exploit the gray areas in causality of events to sow confusion and divert attention.

Wider trends and narratives about wildfires in Chile

Alongside looking at the arson narrative specifically, we reviewed a random sample of 20,000 posts out of 56,100 posts related to wildfires between August 2022 and August 2023. This suggested that climate change and drought is present within the online conversation. Specifically, we found 290 posts using the term "climate" or "climatic," many of which discussed the causes and effects of climate change in the country. A further 211 posts mention the term "drought".

The most prolific account in the analyzed period, with the highest number of posts on X related to droughts and fires, is @ChileAlertaApp, which posted about the topic at least 262 times. This account is associated with an application that provides notifications about natural disasters, primarily earthquakes, and shares official information on fire alerts.

The second account that posted the most on the subject (190 times) came from the account @NoticieroAnimal, which is affiliated with the International Network for Animal Rescue and Aid, highlighting another area of interest in relation to the fires - the protection of wildlife.

While the majority of posts mentioning the historic drought highlight it as a significant factor contributing to the fires, there are also users who downplay its importance. In one of the Twitter exchanges we analyzed, the former Chilean Minister of the Environment, Marcelo Mena-Carrasco, made a statement on February 4th.



These posts translate as: "I have absolutely no sympathy for the forestry industry. But we're quick to blame big industries for problems we've all contributed to. In California, they also experience massive fires, without there being plantations. It's climate change, management..."

Another user replies: "Large forest fires have existed in Chile for decades, and with few exceptions, they are always intentionally set. Drought and high temperatures can contribute, but they are not the root cause. The only ones responsible for the fires are the fools who start them; this should not be forgotten."

In the sample of 20,000 posts, TikTok videos garnered the most engagement. The post with the highest engagement (88k) in the sample, from February of this year, features a Colombian environmental influencer reporting that 26 people had died in the wave of fires in Chile. In addition to discussing the severe drought in the region, she highlights that, despite the arrest of nine individuals on suspicion of causing fires, environmentalists attribute the responsibility to the agroforestry industry for practicing monocultures, which they claim are more susceptible to fire.

Another noteworthy aspect in this review was 33 references to comments by left-wing Carlos Montes, the Minister of Housing and Urbanism. He stated in an interview that wild rabbits are one of the agents spreading the flames in forest fires.

"The rabbits, when a fire starts, get burned and run to areas where there is no fire, and they carry the fire to the other sector," he added (Belmar, 2023).

Reactions to his statement appear to come from government opponents, who view it as a diversion from the real culprits, the arsonists. Users mock the minister's comment, and one even uses the hashtag #conejosterroristas (#terroristrabbits).

Conclusions

In this case, the misinformation narrative is not objectively false but rather relies on framing the cause of wildfire damage as criminal. This approach aligns with right-wing "hard on crime" policies, rather than climate adaptation measures aimed at protecting the forests. Urruticoechea's actions demonstrate how he leveraged this highly visible opportunity to promote the arson narrative, which is consistent with a broader spectrum of right-wing and anti-climate views.

This narrative exploits the multifaceted nature of wildfire damage, with different individuals cherry-picking one of the several causes to support their arguments. While it's true that fires can be ignited by people, this does not negate the impact of climate change in creating conditions conducive to the rapid spread of wildfires.

Ultimately, the arson narrative diverts attention from the importance of climate adaptation measures to mitigate the effects of droughts. The emphasis on divisive issues could overshadow the need for cohesive, sustainable environmental policies and accountability at the leadership level. Frequently, profiles discussing the arsonist issue also espouse other elements of conservative and far-right ideologies, as exemplified by Cristóbal Urruticoechea's claims

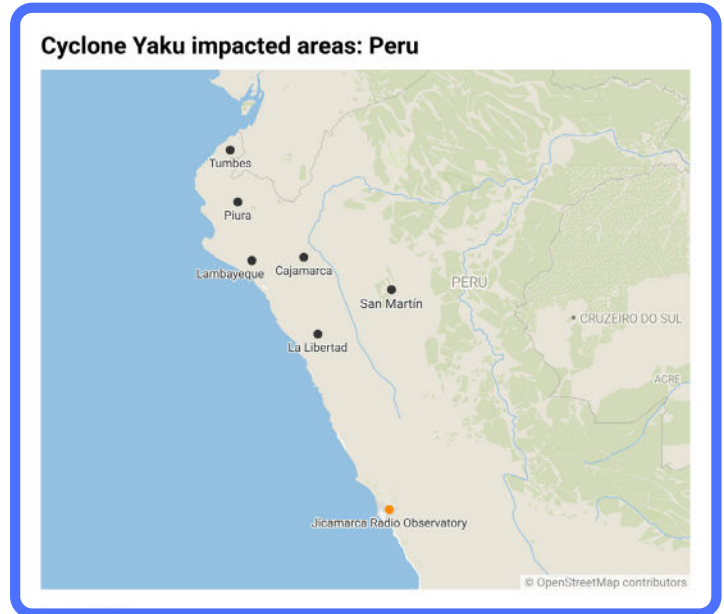


Peru: A classic conspiracy theory reemerges

Peru: A classic conspiracy theory reemerges

Summary

In March 2023, Cyclone Yaku swept in from the Pacific Ocean, causing heavy rains and landslides in Peru and Ecuador. In response to these events, misleading social media posts falsely attributed the damage to the HAARP Project, a frequent subject of global conspiracy theories. Conspiracy theorists attempted to connect the HAARP project to a set of real antennas located in Peru as supposed "evidence" for their misleading narratives.



Misinformation narrative: Cyclone Yaku is man-made

In March, Peru and Ecuador were hit by Cyclone Yaku, an uncommon low-pressure phenomenon. The cyclone formed on March 4th over the Pacific Ocean, affecting the north-central regions of the country in the following days, such as Tumbes, Piura, Lambayeque, La Libertad, Cajamarca, San Martín, Pasco, and Áncash, as well as the capital, Lima.

Peru: A classic conspiracy theory reemerges

After it dissipated, the Peruvian government stated that the cyclone had resulted in the deaths of 69 people and seriously affected another 10,874, including those injured or residents who lost their possessions.

During the disaster, social media posts emerged, suggesting that Yaku was a product of the HAARP system, a recurring trope in climate conspiracy theories. The High-frequency Active Auroral Research Program (HAARP) was operated by the U.S. military from 1993 to 2014 and was designed to study the outer atmosphere. Although its purpose was scientific in nature, numerous conspiracy theories have arisen, alleging its involvement in weather modification, mind control, and other sinister activities (Magsi, 2023).

We found numerous posts mentioning Haarp and Yaku, some with just the hashtags #haarp and #yaku, with over 260,000 combined engagements on social media. The posts that we identified on this topic had a combined reach of approximately 270,000 people. Some of these posts were found on TikTok. One of them, from a user identified as "LadyAnita", had 64,000 views and more than 2,500 likes. It shows a street supposedly flooded due to the effects of Yaku, accompanied by the question, "When do they turn off Haarp? Enough is enough, Dina, the people don't like you", referring to President Dina Boluarte.



This post translates as:
The image on the side translates to: "Now that is TRENDING #RAIN #LIMA #PERU #Senamhi #WORLD and #YAKU with this video <https://youtu.be/VZN7snMBrUc> I CONCLUDE that they ACTIVATED the #RADARS that are installed in #JICAMARCA and I wouldn't be surprised if #PROJECTHAARP #HAARP is involved in this. @PorunPanammejo1"

Another post mentions an alleged attack by the United States against Peru and also mentions President Dina Boluarte, whom it labels as a murderer.



This posts translates as:
"Urgent!!! Spread the word!!!!
🌐 Climate war against Peru attacked by the US empire with the cyclone #yaku created by the #haarp project using the Jicamarca facilities and antennas!!! Nothing is coincidental because they see the people aware and conscious of new changes and that every day mobilizes more and more!!! spread, copy and paste so Peruvians open their eyes down with the dictatorship only the people save the people!! #Dinamurderer"

Beyond Cylone Yaku, HAARP related posts also continue to circulate globally. We identified 10,655 Spanish language posts referring to HAARP from January 1st 2023 - October 5th 2023, with a combined reach of over 32.2 million people. While the majority of these posts came from "unknown" locations, Spain originated the most posts where a location was identified, with 1,759 references to HAARP.

Wider trends and narratives about cyclones in Peru

An analysis of 7,722 posts about floods, landslides, and cyclones in Peru, taken from between August 2022 and August 2023, reveals that much of the social media discourse focuses on the impacts of disasters and their resolution. Among these posts, at least 1,019 of these posts use the term "emergency."

Among the most engaging posts in Peru is the news about the arrival of Yaku, 2,449 engagements, the story of a congressman who was saved from a landslide 2,712, and a criticism of the mayor of Lima for his limited response (2,383):

"What is the response of the Mayor of Lima, Rafael López Aliaga, to Limenians asking him to work against the huaicos? 'The Municipality is broke. Don't bother me!'"

The response of the mayor of Lima, an ultraconservative, to the Yaku emergency was the subject of comments fitting into a scenario of political polarization. Besides the above criticism, there were other posts along the same lines:

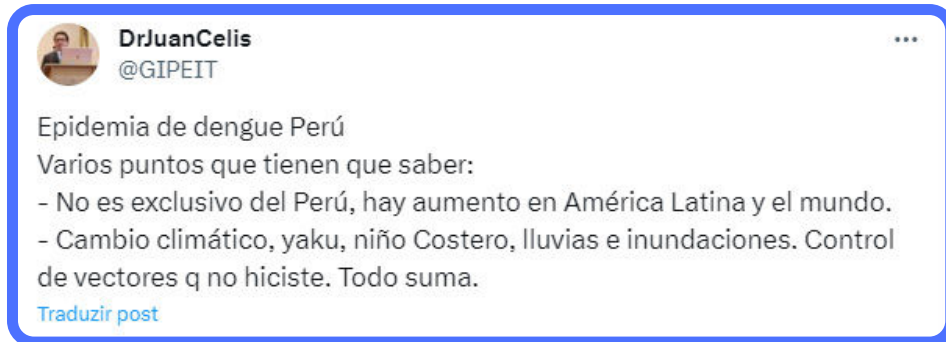
"We have the Mayor we deserve for not knowing how to choose!! A man who to this date only dedicates himself to insulting journalists and does nothing for Lima! Where is 'Lima global power'? He couldn't even address the emergency brought on by the Yaku cyclone!!!!", a user criticized on Twitter on April 29.

But there were also those who defended Aliaga against attacks from the left:

"The lefties from Juntos por el Empleo, Nuevo Peru, Peru Libre, and other messes are eagerly waiting for huaicos to occur in Lima to screw over Rafael Lopez Aliaga. Ahhhhh... but they are quiet about their mayor of Chiclayo who is from Juntos por el Empleo," said a supporter of the mayor on March 11.

In the dialogue about storms in Peru, we found 54 references to climate change. The vast majority are explanatory content about how extreme events in Peru, especially Yaku, are connected with climate change.

The one with the highest reach (15,800), from May 11, is from a user who identifies as a doctor and explains the increase in dengue in the country.



This post translates as: "It's not exclusive to Peru, there's an increase in Latin America and the world. Climate change, Yaku, coastal El Niño, rains, and floods. Vector control that you did not do. Everything adds up," he details.

The term "huaico" appears 2,024 times in our sample. These are large mudslides originating from the higher Andes, which can directly impact residents or fall into river channels, leading to sudden floods.

The high number of posts indicates a significant concern about this phenomenon. In many tropical regions, heavy rains can trigger landslides, but when these rains hit a mountain range the size of the Andes, the effect can be devastating (Andina, 2023).

This is a problem that Peruvians have faced for a long time, hence it has a name of indigenous origin (Academia Peruana de la Lengua, n.d.). However, climate change may increase the frequency and intensity of these events (WWF, 2017). Consequently, preparedness for huaicos is a critical aspect of Peruvians' readiness for climate-related disasters.

Many posts within our sample warned about the forecast of huaicos made by the National Meteorology and Hydrology Service of Peru (Senamhi) for the months of January and February. Subsequently, as the forecasts were confirmed and the rains caused the huaicos to descend from the mountains, the posts began to report on the consequences of the tragedy.

Within the discussions about causes and effects, criticisms surfaced regarding the actions of President Dina Boluarte during natural disasters, with her name appearing 150 times. In recent years, Peru has experienced political instability, with Boluarte being the sixth leader in six years and the country's first female president. She succeeded Pedro Castillo, who was ousted amidst controversy and corruption allegations.

Following Castillo's removal, Boluarte's leadership faced protests, with demands for new elections and the dissolution of Congress. Clashes between protesters and security forces resulted in 66 deaths between December 2022 and February 2023. Boluarte issued an apology and claimed she advised against lethal force.

The emergence of Yaku caused the protests to be temporarily suspended. After the cyclone's passage, with the aftermath of destruction showcasing the authorities' inadequate preparedness for such events and the onset of a dengue outbreak, dissatisfaction with the government once again led protesters to take to the streets (RTVE, 2023; Pimentel, 2023 and Giraldo, 2023).

Conclusions

The narrative involving the HAARP antennas changing the weather is not unique to Peru, and is a recurring theme in other countries. HAARP has long been a fixture in the realm of climate-related conspiracies. In their research titled "Los Eco-Ilógicos," authors Cristina López G. and Santiago Lakatos identified HAARP as a common reference in Spanish-language climate disinformation. "We saw frequent references to HAARP and chemtrails, such as videos on TikTok purporting to show before and after footage of contrails visible in the sky to suggest they caused subsequent changes in the weather. These posts often include hashtags referencing geoengineering, HAARP, climate manipulation, and other conspiracy theories, such as about the Illuminati" (López and Lakatos, 2022).

The presence of the Jicamarca Observatory in Peru created a link between HAARP and Cyclone Yaku, underscoring how pre-existing contextual factors can be manipulated within misinformation narratives when extreme weather occurs.

The association with Cyclone Yaku emerges as another high-visibility opportunity to circulate the HAARP conspiracy theory, reinforcing the discourse of climate change denial. Consequently, this narrative implies an attempt to provide further "evidence" of a conspiracy aimed at manipulating the weather, falling squarely within the climate misinformation playbook in terms of misattribution of the impacts of climate change.

Overall Conclusions

After closely analyzing three distinct cases across different extreme weather events in Latin America regions, we identified some consistent misinformation patterns. From our combined insights, we've derived the following conclusions:

The characteristics of extreme weather events create a specific set of opportunities for misinformation to spread, because they are:

- 1. Highly visible:** The high visibility of extreme weather events presents attractive opportunities for promoting specific agendas. In the case of Cyclone Yaku, the extent of the destruction could have been seen as convincing "evidence" that HAARP can manipulate the weather. Likewise, local politicians in Chile and Brazil capitalized on these events to advance their own objectives.
- 2. Multi-causal:** We observed that this factor played a particularly significant role in wildfires in Chile, where a combination of drought, inadequate forestry practices, extreme heat, and certain human-made incidents converged to cause extensive devastation. This complexity allowed the framing of wildfires as a crime issue to gain traction, with a February survey indicating that 55% of Chileans believed "terrorist groups" bore primary responsibility (Diario Financiero,

2023). In contrast, the origin of the false narrative in Brazil and Peru was not due to complexity but rather the basis of the narrative was a lie.

- 3. Emotional and Uncertain:** In all these cases, misinformation narratives attribute the destruction to a scapegoat, generating anger among local audiences. This scapegoating misguides genuine concerns about the threats posed by extreme weather, diverting the energy and attention of the masses away from more pressing and factual discussions about climate change and possible responses. Consequently, dialogue related to addressing the climate-related factors behind extreme weather is crowded out, limiting the results of these opportunities to generate mass demand for implementing effective mitigation, and crisis preparedness and response measures.

Extreme weather events magnify existing trends and tensions:

In the three misinformation narratives we analyzed, existing societal apprehensions, concerns and misconceptions were leveraged and exploited, rather than anything new. Arson and HAARP are well-established anti-climate narratives and while the "burst dam" itself was a new lie, it enabled an expression of existing tensions. By magnifying pre-existing factors, these false narratives gain traction more easily as they resonate with those already

predisposed to such beliefs. The weather events can then become a “proof point” for a misinformation narrative, for example, the role of HAARP and the Jicamarca Observatory in changing the weather. This approach strengthens the “credibility” of these narratives and poses challenges to efforts aiming to debunk them.

Each narrative has a misattribution of the cause of the event at its foundation,

with a consistent pattern of intentionally misattributing or misrepresenting the event's main causes. On all three occasions, events were wrongly associated with criminal intentions – intentional dam gate openings in Brazil, “terrorist” arsoning in Chile and deliberate climate “manipulation” in Peru. Such narratives shift attention from genuine climatic phenomena to alternative, towards more politically charged or conspiratorial explanations. This clouds public understanding of the critical science behind climate change, potentially hindering urgent climate actions. If climate factors aren't recognized as central to the problem, they're possibly sidelined in proposed solutions.

Official sources are speaking publicly to address these narratives, but with unclear impact.

In the case of Chile, the Minister of the Interior, Carolina Tohá urged people to check for the real facts about the causes of the wildfires, pointing

people towards factual sources. In Brazil, the Attorney General Jorge Messias stood in to formally request a stop to the spreading of lies about the burst dam and specifically that the right-wing journalist Alexandre Garcia redact his comments about the dam. This resulted in him issuing a statement admitting that the dam did not have gates which could be opened, on the same channels where he had shared the misinformation. While these moves do not alleviate the impact of the false narratives, they can have a profound effect where they are able to successfully discredit false narratives, as with the case in Brazil.

These case studies provide further examples of the relationship between political polarization and the spread of misinformation,

with the left and the right each having entrenched views on climate, which tip out into public debates when extreme weather events happen. This is especially apparent in nations marked by deep political rifts like Brazil and Chile, where weather-related crises are repurposed as instruments for political maneuvering. One recurrent observation was the significant volume of misinformation emerging primarily from the political right, as seen with the arson claims by Chile's far-right factions.

Final comments:

Overall, our investigations revealed the striking predictability of these misinformation trends. Our exploration into the broader contexts surrounding these narratives consistently demonstrated that the foundation of each misinformation narrative existed prior to the triggering weather events. Extreme weather is likely to increase in frequency and severity, and the likelihood that they will become increasingly politicized and weaponized is high (IPCC, 2023). However, while extreme weather events are becoming increasingly frequent, they are also becoming easier to forecast. Our analysis shows that contextual research can give a clear indication of the types of misinformation narratives that are likely to occur in relation to a specific weather event in a specific place. This combination of factors shows that many foundational elements needed to get ahead of misinformation around extreme weather are already present, providing a hopeful note for those engaged in the fight against climate-related mis- and disinformation.

Annex 1. References

Academia Peruana de la Lengua (n.d.). Huaico. [online] Available at: <https://apl.org.pe/palabra-del-dia/huaico/> [Accessed 25 Oct. 2023].

Advocacia-Geral Da União Procuradoria-Geral Da União (2023). Available at: <https://www.gov.br/agu/pt-br/comunicacao/noticias/agu-pede-direito-de-resposta-por-desinformacao-sobre-inundacoes-no-rio-grande-do-sul/Notificacao.pdf> [Accessed 18 Oct. 2023].

Anon, (n.d.). Climate Action Against Disinformation | What is misinformation & disinformation. [online] Available at: <https://caad.info/what-is-misinformation-disinformation/#universal-definition> [Accessed 25 Oct. 2023]

Andina (2023). ¿Qué es un huaico, cómo ocurre y cuáles causaron más daños en este siglo en Perú? [online] andina.pe. Available at: <https://andina.pe/agencia/noticia-que-es-un-huaico-como-ocurre-y-cuales-causaron-mas-danos-este-siglo-peru-928239.aspx> [Accessed 28 Aug. 2023].

BBC (2023). Por qué los incendios en Chile están siendo los más destructivos de los últimos años. (n.d.). BBC News Mundo. [online] Available at: <https://www.bbc.com/mundo/noticias-america-latina-64577581>.

BBC (2023). Ciclone no Sul: o que está por trás das tempestades devastadoras que já mataram mais de 40 pessoas. (2023). BBC. [online] 6 Sep. Available at: <https://www.bbc.com/portuguese/articles/cd10r9l3g7yo>.

Belmar, J.F. (2023). Ministro Montes: 'Los conejos, cuando parte un incendio, se queman y arrancan a donde no hay fuego'. [online] BioBioChile - La Red de Prensa Más Grande de Chile. Available at: <https://www.biobiochile.cl/noticias/nacional/chile/2023/02/23/ministro-montes-los-conejos-cuando-parte-un-incendio-se-queman-y-arrancan-a-donde-no-hay-fuego.shtml> [Accessed 6 Nov. 2023].

Cakapyr, S. (2022). Cornell leads expansion of Jicamarca radar observatory | Cornell Chronicle. [online] Available at: <https://news.cornell.edu/stories/2022/09/cornell-leads-expansion-jicamarca-radar-observatory> [Accessed 18 Oct. 2023].

Ceran (2023). Esclarecimento sobre as comportas nas barragens da CERAN. [online] Ceran - Cia Energética Rio das Antas. Available at: <https://ceran.com.br/news/esclarecimento-sobre-as-comportas-nas-barragens-da-ceran/> [Accessed 25 Oct. 2023].

Cook, J. (2019). Understanding and countering misinformation about climate change. In Chilwa, I. & Samoilenko, S. (Eds.), Handbook of Research on Deception, Fake News, and Misinformation Online (pp. 281-306). Hershey, PA: IGI-Global.

- Couto, M.** (2023). Entenda como começou a circular a fake news difundida por Alexandre Garcia sobre as enchentes no RS. [online] Available at: <https://oglobo.globo.com/blogs/sonar-a-escuta-das-redes/post/2023/09/como-comecou-a-circular-a-fake-news-difundida-por-alexandre-garcia-apos-enchente-no-vale-do-taquari-no-rs.ghtml>.
- El Periodico** (2021). Mapuches interponen recurso de protección contra APRA por discurso racista que incita a la violencia y al odio contra su pueblo. [online] El Periódico. Available at: <https://elperiodico.cl/mapuches-interponen-recurso-de-proteccion-contra-apra-por-discurso-racista-que-incita-a-la-violencia-y-al-odio-contra-su-pueblo/> [Accessed 18 Oct. 2023].
- Folha de S.Paulo** (2023). Rio Grande do Sul confirma 16a morte causada por ciclone. [online] Available at: <https://www1.folha.uol.com.br/cotidiano/2023/06/ciclone-chega-a-15a-morte-e-e-maior-desastre-climatico-da-historia-do-rs.shtml> [Accessed 19 Oct. 2023].
- Giraldo, P.C.** (2023). Retoman protestas en Arequipa en contra del gobierno de Dina Boluarte. [online] infobae. Available at: <https://www.infobae.com/peru/2023/06/15/dina-boluarte-retoman-protestas-en-arequipa-en-contra-de-la-presidenta/> [Accessed 25 Oct. 2023].
- Guzmán, J.L.** (2023). Conaf revela que intencionalidad en incendios ya investigados en Biobío y La Araucanía llega al 40%. [online] La Tercera. Available at: <https://www.latercera.com/earlyaccess/noticia/conaf-revela-que-intencionalidad-en-incendios-ya-investigados-en-biobio-y-la-araucania-llega-al-40/> [Accessed 25 Oct. 2023].
- Hassan, A. and Barber, S.J.** (2021). The effects of repetition frequency on the illusory truth effect. *Cognitive Research: Principles and Implications*, [online] 6(1). doi:<https://doi.org/10.1186/s41235-021-00301-5>.
- IPCC**, 2023: Summary for Policymakers. In: *Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change* [Core Writing Team, H. Lee and J. Romero (eds.)]. IPCC, Geneva, Switzerland, pp. 1-34, doi: [10.59327/IPCC/AR6-9789291691647.001](https://doi.org/10.59327/IPCC/AR6-9789291691647.001)
- Lizana, F. et al** (2023). El incendio forestal: Una tragedia permanente en nuestra historia reciente. [online] Available at: <https://www.doctorado.geografia.uc.cl/noticias-2/250-el-incendio-forestal-una-tragedia-permanente-en-nuestra-historia-reciente>.
- López, C. and Lakatos, S.** (2022). Los Eco-Ilógicos A look inside the sprawling online network that spreads climate misinformation to Spanish-speaking communities around the world. [online] Available at: https://public-assets.graphika.com/reports/graphika_greenlatinos_report_loos_eco-ilogicos.pdf [Accessed 18 Oct. 2023].

- Magsi, D.H.** (2023). HAARP Technology: Debunking Conspiracy Theories and Understanding the Science. [online] Modern Diplomacy. Available at: <https://moderndiplomacy.eu/2023/02/27/haarp-technology-debunking-conspiracy-theories-and-understanding-the-science/>.
- Martínez, R.** (n.d.). Cadem: Un 93% piensa que los incendios que afectan al sur del país son intencionales | Diario Financiero. [online] www.df.cl. Available at: <https://www.df.cl/economia-y-politica/actualidad/cadem-un-93-piensa-que-los-incendios-que-afectan-al-sur-del-pais-son> [Accessed 18 Oct. 2023].
- Pimentel, P.V.C.** (2023). Dina Boluarte: 6 meses de gobierno en medio de protestas, denuncias por genocidio, crisis por dengue y la amenaza de El Niño Costero. [online] infobae. Available at: <https://www.infobae.com/peru/2023/06/07/dina-boluarte-7-meses-de-gobierno-en-medio-de-protestas-denuncias-por-genocidio-tesis-por-dengue-y-la-amenaza-de-el-nino-costero/> [Accessed 25 Oct. 2023].
- RTVE** (2023). PERÚ: DETENIDAS temporalmente las PROTESTAS contra DINA
- Start Network.** (2023). Start Fund Alerts Dashboard. [online] Available at: <https://startnetwork.org/funds/global-start-fund/alerts> [Accessed 25 Oct. 2023].
- T13** (2023). Ministra Tohá y polémica por intencionalidad de incendios: 'No es útil seguir en esta disputa'. [online] <https://www.facebook.com/teletrece>. Available at: <https://www.t13.cl/noticia/politica/ministra-toha-y-polemica-intencionalidad-incendios-no-es-util-seguir-esta-disputa> [Accessed 19 Oct. 2023].
- WWF** (2017). ¿Cuál es la relación entre los huaicos y el cambio climático? [online] Available at: <https://www.wwf.org.pe/?291150/huaicos-cambio-climatico> [Accessed 7 May 2023].
- Urruticoechea, C.** (2023). Instagram. [online] Available at: <https://www.instagram.com/reel/CrKF3e4tMVx/?sa=D&source=docs&ust=1699286887160686&usg=AOvVaw1QDy8wiNWuzBtFe-IOpprF> [Accessed 6 Nov. 2023].
- Yáñez, L.** (2013). Radio Observatorio de Jicamarca: Entre el reconocimiento y la indiferencia. [online] PuntoEdu PUCP. Available at: <https://puntoedu.pucp.edu.pe/noticia/radio-observatorio-de-jicamarca-entre-el-reconocimiento-y-la-indiferencia/> [Accessed 18 Oct. 2023].
- Un.org.** (2000). Home | CERF. [online] Available at: <https://cerf.un.org/>.

Annex 2. List of extreme weather events

Events which were reviewed for misinformation narratives:

Hazard	Country	Date
Wildfires	Brazil	May to September 2023 (dry season)
Landslides	Brazil	February and September 2023
Drought	Chile	Historical 14 year drought
Wildfires	Chile	February 2023
Drought	Peru	September 2022 to January 2023
Floods	Honduras	September 2022
Floods	Guatemala	September 2022 and July 2023
Drought	Lake Titicaca	March to October 2023
Heatwave	Mexico	May and June 2023
Landslides	Ecuador	March 2023
Landslides	Peru	February and March 2023
Landslides	Colombia	July 2023
Hurricane	Julia	October 2022
Hurricane	Fiona	September 2022

*Events identified through news in local media or that had humanitarian aid requests to the Start Fund, which funds small and medium emergencies in low and middle income countries

Annex 3. Searches

This is an example search we used in the exploratory phase, to identify posts which refer to extreme weather and use a phrase known to be used by those spreading misinformation:

("incendio forestal" OR "incendios forestales" OR "alerta roja de incendio" OR "incendios en los bosques" OR huracán OR ciclón OR inundación* OR deslizamiento* OR tormenta OR sequía OR "catástrofe natural" OR vientos) AND ("crisis climática" OR "fraude climático" OR "histeria climática" OR "tormenta solar" OR "los negas" OR conspiranoico* OR #incendioforestal OR #incendiosforestales OR #agenda2030 OR globalis* OR "global heating" OR "calentamiento global" OR "ebullición global" OR "ola de calor" OR "calor extremo")

Primary searches we used for overall narrative analysis:

Brazil: (inundaç* OR enchente* OR ciclone) AND ("Rio Grande do Sul" OR RS OR sul OR Santa Tereza OR Muçum OR Encantado OR "Roca Sales" OR Lajeado OR Estrela OR "Cruzeiro do Sul") NOT (Ucrânia OR Líbia OR Índia OR comportamento OR "pintou um clima" OR Boulos OR "internar minhas" OR "pintar um clima" OR vulcão OR SC OR F1 OR Valencia OR Brumadinho OR Cid OR "Projeto Parada Verde" OR extinta OR Amazônia OR "não fez o L" OR deprimida OR #feltrin OR #formula1 OR "principais notícias do agronegócio" OR Velejadora OR Arca OR Bolsonaro deturpa OR Jogos OR "Aerportos de SP" OR Itália OR garças OR Esporte OR OnlyFans OR Grêmio OR RT OR QT)

Peru: (ciclón OR tormenta) AND (Per* OR Tumbes OR Piura OR Lambayeque OR Lima) AND NOT ("Huracán Lee" OR lee OR Canel OR Turquía OR Nicki OR Brasil OR Daniel OR Grecia OR fútbol OR drogas OR Day OR Idalia OR selección OR "hong kong" OR franklin OR Ubeda OR Aurich OR Retiz OR Tolentino OR "tormenta perfecta" OR Washington OR Constitución OR coca OR Klug OR Úbeda OR Taiwán OR Guevara OR Hilary OR Betty OR Valencia OR goles OR Poly OR Tailandia OR Reino Unido OR "tormenta eléctrica" México OR Flórida OR "vaso de agua" OR "ojo de la" OR Feyenoord OR Don OR laborator* OR nieve OR arena OR India OR "Después de la tormenta" OR Bret OR parabrisas OR RT OR QT)

Annex 3. Searches

Chile: (Chile OR Maule OR Ñuble OR Biobío OR Araucanía) AND ("incendios forestales" OR "incendio forestal") NOT (Italia OR Irak OR "Simón Bolívar" OR Valparaiso OR antiencerronas OR entel OR casino OR huawei OR Tenerife OR "Olivia Newton-John" OR rubecula OR salmones OR "costa resiliente" OR wintek OR Argelia OR crediticio OR j-hope OR radware OR "Que terrible para el invierno" OR "Viña Del Mar" OR Pascua OR Mayari OR "Nueva York" OR sismo OR "Cristo Redentor" OR RT OR QT)

Annex 4. Fact checking agencies

Chile: Mala Espina

Argentina: Chequeado

Peru: OjoPúblico

Colombia: ColombiaCheck

Paraguay: El Surtidor

Costa Rica: NoComaCuento

Mexico: Animal Político

Nicaragua: Gato Encerrado

Ecuador: Ecuador Chequea

Bolivia: Bolivia Verifica

AFP: Global