Climate Action Against Disinformation

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Roots-Powered Insights: Research on Combating Climate Disinformation Across the Global South

Findings from Anti-Climate Disinfo Research Fellows in Argentina, South Africa, Nigeria, Brazil, Mexico, Peru, and Uganda

Roots-Powered Insights: Research on Combating Climate Disinformation Across the Global South

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Climate Action Against Disinformation

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TABLE OF CONTENTS

Climate Action Against Disinformation

roots

Disinformation Narratives in the San Matías Gulf

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TABLE OF CONTENTS

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Introduction

In the north of Argentine Patagonia, the San Matías Gulf and Valdés Peninsula form one of the most biodiverse areas of the South Atlantic and the world. Its calm, clear waters are home to whales, dolphins, sea lions, migratory birds, fish, algae, mollusks, and many other forms of marine life. For this reason, the area includes four protected natural reserves and a national park, while the Valdés Peninsula has been declared a UNESCO World Heritage Site. This territory is inhabited by coastal communities whose way of life is based on tourism, artisanal fishing, and other sea-related activities.

However, this natural and social balance is under threat: energy sector corporations, supported by the provincial and national governments, are promoting hydrocarbon projects—an oil pipeline, an oil port, and LNG ships—that aim to be established without considering the irreversible impacts they could cause, not only at a regional level but also globally by contributing to the climate crisis.

Among the main ongoing projects is Vaca Muerta Oil Sur SA, a megaproject that includes the construction of an oil port and a pipeline over 400 kilometers long to transport crude oil from the Vaca Muerta fields in Neuquén to the coast of the San Matías Gulf in Río Negro. Additionally, just a few kilometers off the coast, two liquefied natural gas (LNG) megaships are planned for export.

In order for these projects to move forward, laws were unconstitutionally amended, and attempts were made to bend popular will by excluding communities from decision-making. The media and social networks are used to spread narratives that promote extractivist projects, conceal the real risks they entail, and render invisible the struggles of communities defending their territories. It is in this context that a dominant economic narrative emerges, which links “progress, development, work, and investment” to the advance of the hydrocarbon industry.

All of this leads us to ask:

How do disinformation narratives operate that present hydrocarbon extractivism as a driver of development and progress in the San Matías Gulf region? And what interests, actors, and socio-environmental consequences are being hidden behind these stories?

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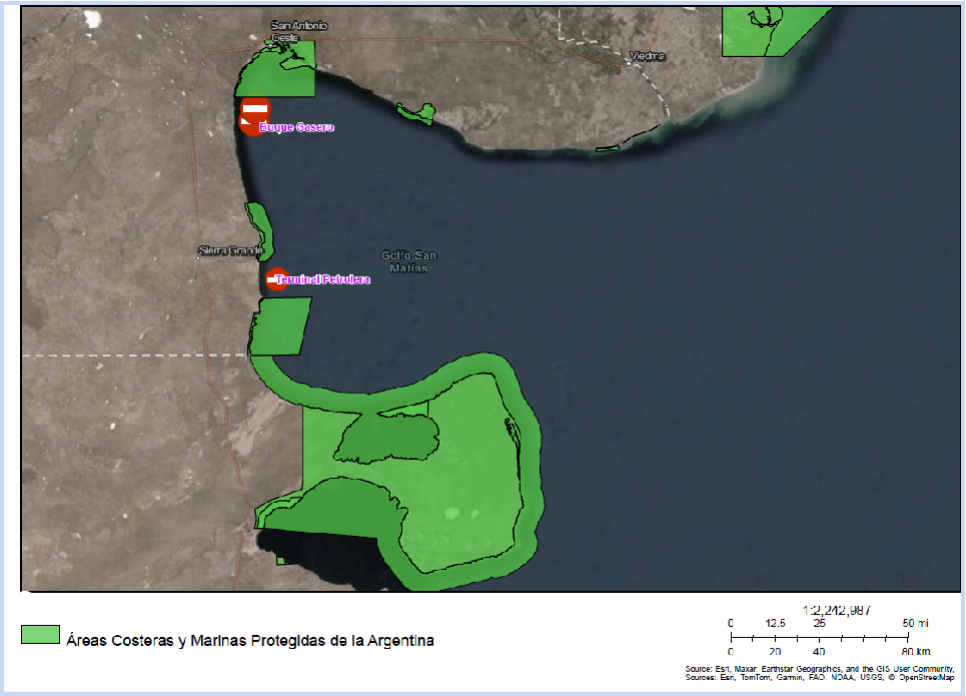
Discussion

Context

The defense of the San Matías Gulf has a long history of community organization in the face of advancing oil interests.

In 1995, the then privatized Yacimientos Petrolíferos Fiscales – Fiscal Oilfields (YPF) proposed constructing a pipeline and a port terminal in the gulf. The company had been created in 1922 by the national government as a symbol of energy sovereignty, was converted into a corporation in the 1990s, and currently operates as a mixed enterprise with both state and private capital participation.
The oil extractivist initiative in the San Matías Gulf sparked a strong and diverse popular mobilization.
This collaboration between coastal communities, scientific, business, and tourism sectors, as well as social organizations, managed to temporarily halt the project and led to the enactment of Law 3308, unanimously approved in 1999 by the Río Negro Provincial Legislature. The law guaranteed the protection of the region by prohibiting all hydrocarbon exploration, exploitation, and prospecting activities, as well as the construction of loading and unloading terminals and pipelines in the San Matías Gulf and the Río Negro territorial waters.

For more than twenty years, this legal framework ensured the preservation of the ecosystem and allowed the sustained development of coastal communities. During all that time, the Gulf served as an example of balance between human development and environmental conservation.



This balance was broken in September 2022, when the Río Negro Legislature repealed Law 3308 at the request of YPF to allow the construction of the Vaca Muerta Oil Sur (VMOS) pipeline. The reform was approved without prior consultation with indigenous communities (as established by ILO Convention 169 on Indigenous and Tribal Peoples), in a closed session that violated the principles of the Escazú Agreement, the principle of environmental non-regression, and the principle of progressiveness established in the General Environmental Law, which prohibit rolling back already acquired environmental rights.

Communities, together with socio-environmental and civil society organizations, carried out all kinds of actions in the territory –such as meetings, information sessions, workshops, and marches -always aimed at building community networks across the plurinational territory to develop joint strategies and strengthen regional resistance.

On the legal front, lawsuits were filed in defense of the San Matías Gulf, encountering formal responses that avoided addressing the substance of the problem. In Río Negro, the Superior Court of Justice dismissed the request for unconstitutionality of the amendment to Law 3308 due to "lack of legitimacy" and for not having "an interest that shows a personal and direct harm or prejudice." In the neighboring province of Chubut, similar claims were also rejected. These rulings, based on procedural technicalities, reveal a persistent trend: a judiciary that remains distant from social and environmental claims, while the extractive model consolidates its advance in the region.

The power of extractive projects

The Vaca Muerta Oil Sur project represents the most significant expression of this advance, which involves the construction of a pipeline over 400 km long from Añelo (Neuquén) to Punta Colorada (Río Negro), where a petroleum port with single-point mooring buoys and storage tanks is also planned. Additionally, another polluting project was added, this time involving LNG, which includes the installation of two liquefied natural gas (LNG) vessels for export.

The magnitude of the project sheds light on the political and economic pressures that led to the law being rescinded. In 2024, YPF announced the start of the first construction phase with the support of the provincial and national government. Shortly afterwards, the Vaca Muerta Oil Sur (VMOS) consortium was formed, consisting of the main oil companies operating in the country: YPF, Pan American Energy, Vista, Pampa Energía, Pluspetrol, Shell, Chevron, Tecpetrol, and Gas y Petróleo de Neuquén. In July 2025, the project secured additional financial backing through a $2,000 million USD syndicated loan, granted by 14 national and international banks, including Citi, Deutsche Bank, Itaú, JP Morgan, and Santander.

These developments confirm the structural power of the hydrocarbon lobby, which is capable of influencing all three branches of government to dismantle a legal framework that had provided environmental protection for two decades. They also mark the beginning of a new phase of the extractivist model, in which media narratives and disinformation campaigns become central tools for attempting to build social consent through false or misleading information.

The legitimization campaign behind the project: media, power, and narrative

The progress of the VMOS project relies not only on physical infrastructure, but also on narrative infrastructure. In parallel with the construction of the pipeline, a communication

network is being deployed to promote a vision of the project linked to progress, development, and job opportunities as symbols of major economic improvement. The campaign combines disinformation strategies with traditional media and social networks, digital advertising and symbolic construction, where corporate, state, and media interests converge.

Traditional and regional media: amplifiers of the narrative

The main regional media outlets –*Diario Río Negro*, *LMNeuquén*, *Más Energía*, *Vaca Muerta News*, *Econojournal*, among others —act as spokespeople for the expansion of hydrocarbon projects, effectively functioning as informational extensions of the VMOS consortium. On their websites and social media platforms, the pipeline and oil port are portrayed as the most significant fossil infrastructure works of recent decades, emphasizing cutting-edge technology, job creation, and the "economic reactivation" of the involved areas.

These media narratives respond both to editorial lines aligned with the oil industry and to direct or indirect advertising funding. The convergence of messaging –even across outlets with different audiences –reveals the existence of a coordinated communication strategy that frames the project as a matter of national interest and positions hydrocarbon activity as synonymous with development.

The influence of these media outlets is significant: a 2025 study shows that in the Alto Valle region of Río Negro, more than half of the population (56%) gets their information from online news websites and 40% from social media, while 51% report that the information they consume on social networks influences their opinions. In this context, information disseminated by local and regional media, perceived as "trustworthy" sources, has a decisive impact on shaping public opinion.

The role of YPF: energy nationalism and corporate legitimacy

YPF communicates very little about the VMOS project directly through its official channels. Instead, its strategy focuses on broad institutional campaigns portraying the company as being "at the service of the nation," a leader in technology and in energy exports –a clear example of what is commonly referred to as *greenwashing*.

During the first half of 2025, the company allocated more than 53 million pesos to advertising and publicity –a 60% increase compared with the same period in 2024

–revealing the scale of the effort to build legitimacy and symbolic capital while avoiding exposure to the socio-environmental conflicts generated by its projects.

These campaigns appeal to identity-based values: energy as national pride, economic independence, and Argentine labor. Narratively, YPF does not need to speak directly about

the pipeline; it presents itself as its natural guarantor, reinforcing the notion that fossil exploitation is both a patriotic duty and an opportunity for growth. In doing so, it demonstrates clearly that withholding information is also a powerful form of disinformation.

This omission is not a void but a discursive strategy that reshapes common sense. By choosing what is said and what is left unsaid, the company produces an interpretive framework in which extractivism becomes synonymous with development, while environmental concerns are reduced to a mere technical or bureaucratic obstacle. In other words, it does not explicitly distort the facts; instead, it constructs a narrative that is incomplete yet effective and socially acceptable.

At the same time, YPF does not operate alone: its silence functions in synchrony with a broader communication apparatus. Regional media, digital outlets, and social media accounts —many of them supported by advertising funds or political alignment

—reproduce and amplify its narrative, filling in what the company does not state directly. In this circuit, YPF's institutional message is reinforced by local campaigns that translate this epic narrative into concrete promises.

As a result, disinformation operates on two complementary levels: corporate omission and media amplification. YPF's strategic silence opens space for other actors to occupy the communicational arena and legitimize the project. The absence of information becomes a tool of legitimization, delegating the task of persuasion to an ecosystem willing to sustain the same narrative: extractivism as destiny, as mandate, and above all, as a source of Argentinian pride.

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The province of Río Negro: politics, governance, and discourse

The Government of Río Negro has become a central actor in the promotion of these dominant narratives. Through official accounts –those of the governor, the provincial government, and agencies such as Energy, Environment, or Labor –messages are disseminated that present the projects as historic initiatives that will bring progress, employment, and public infrastructure.

This narrative is built on two main pillars: the promise of economic well-being (local employment, royalties, infrastructure), and the reinforcement of political legitimacy (representing the interests "of the people of Río Negro," strengthening the governor's political profile and that of his allies).

The government's communication strategy combines media presence with social media campaigns that emphasize "strict environmental and labor controls" and major benefits, creating the impression of a transparent, profitable, and well-regulated process.

However, the conditions agreed upon with the consortium are opaque: the agreement for the oil pipeline includes a fee for the province of USD 1 billion over 13 years, compared to an investment estimated in several billions, revealing a significant asymmetry in the distribution of benefits.

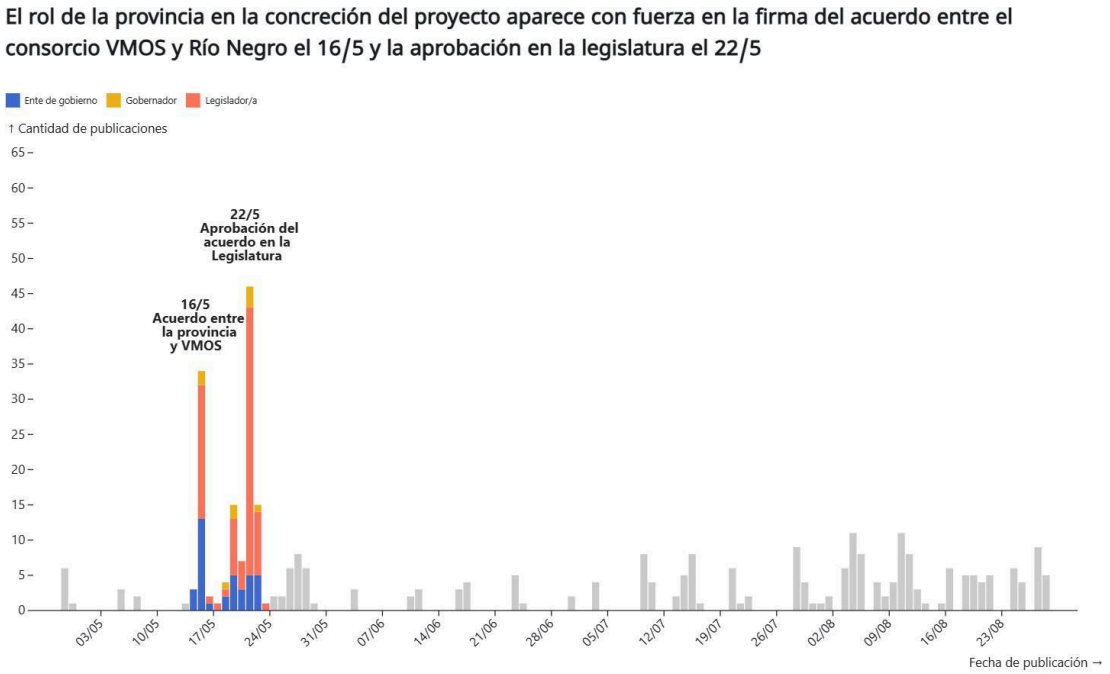
As an example illustrating how these "benefits" actually materialize, in 2024 the energy sector recorded a trade surplus of USD 5.668 million, while studies indicate that only USD 31 million (0.5%) remained in the country. The outflow of capital occurred through various financial mechanisms, such as interest payments to related companies, purchases of assets abroad, and the settlement of part of its revenues outside the foreign exchange system regulated by the Central Bank of the Argentine Republic, among others.

In addition, the province's adherence to the Large Investment Incentive Regime (RIGI) establishes a legal framework of exceptionality for 30 years. This effectively shields corporate privileges against any future attempt at regulation or reform: for three decades, the State will be unable to modify tax conditions or introduce new levies affecting the companies receiving these benefits. Under the premise of attracting investment, the RIGI grants unprecedented autonomy to private capital, stripping provinces of their ability to influence revenue or adjust rules in response to socio-environmental impacts.

These impacts are far from negligible: for example, in Vaca Muerta, at least 2,049 environmental incidents were recorded in 2021, an average of 5.6 incidents per day (spills, gas leaks, water contamination, etc.). This scale puts the narrative of "progress under

control" under strain —when thousands of incidents occur, the silence or downplaying of

them by corporate communication operators and authorities reveals that risk management falls well short of the discourse.
Regarding digital activity, there was a noticeable peak that coincided with key moments: the signing of the agreement between the consortium and the province (16 May) and its legislative approval (22 May). During those days, official social media accounts reported a sustained flow of posts, videos, and statements celebrating the agreement as a "provincial victory."



Este gráfico muestra la frecuencia de publicación de legisladores, entes de gobierno (ministerios y secretarías) y el gobernador entre enero y agosto de 2025, en plataformas de redes sociales (incluyendo Facebook, Instagram, Twitter, TikTok, Youtube y Linkedin). Fuente: Junkipedia.

On the other hand, starting in July and more strongly in August, extractivist projects became a daily axis of official communication. The accounts mentioned above (Government of Río Negro, Secretariat of Energy and Environment, supported by areas such as Labor and Public Works) sustained a narrative of institutional control and efficiency, aimed at reinforcing the idea that the project is moving forward under strict environmental and labor regulations, seeking to dispel any suspicion about the risks or inequalities embedded in the agreement.
In this way, the provincial State, in alliance with companies such as YPF, operates as a deliberate disinformation mechanism that renders impacts invisible, distorts benefits, and

reinforces and amplifies the corporate discourse that translates the extractive promise into a narrative of governance and local pride.

Visual narratives: progress made image

The legitimization campaign also operates on the visual plane. Across images disseminated by media outlets and institutions, VMOS is portrayed against backdrops of modernity and productivity in arid, uninhabited, or "empty" territories. Within this aesthetic of progress –pipelines advancing through barren landscapes, machinery in motion, workers in hard hats, technical renderings and growth charts –the impression is constructed that there is nothing pre-existing that could be harmed. It appeals to a classic developmental imaginary: the territory becomes an empty space to be conquered by technology. Pre-existing ways of life, longstanding regional activities, and coastal ecosystems are thus erased. Instead, a visual language of order, cleanliness, and efficiency is privileged and conveys security and control.
In parallel, and reinforcing the dynamics described above, YPF strengthens a nationalist visual identity through national colors, industrial symbols, heroic language, sponsorship of popular sports, associations with Messi and the national football team, consolidating the idea that the project does not belong to a corporation, but rather "to the Argentine people."

The response of the Gulf communities

In the face of this hegemonic disinformation mechanism, organized communities are developing campaigns and constructing counter-narratives grounded in different values: marine life, coastal landscapes, biodiversity, belonging, and collective enjoyment. These

narratives reinforce a longstanding sense of identity while exposing the extractive risks that have been deliberately obscured.

"Atlanticazo" in Las Grutas - January 4, 2024 PH

However, this symbolic struggle unfolds in a profoundly unequal context. The communities operate with limited material and communication resources, while on the other side stand corporations with multimillion-dollar budgets, professional teams, and direct ties to the State and major media outlets.
In this landscape, alliances with NGOs, socio-environmental collectives, and other supportive organizations have made it possible to create and sustain campaigns, provide technical tools, and amplify their reach. Nevertheless, the communication "battle" remains highly asymmetrical and requires constant effort from the communities to secure a place in public discourse.

A cross-cutting network

Taken together, the communication efforts of companies, government, and media construct a cross-cutting disinformation network operating on multiple levels: economic, political, cultural, and emotional.
Discourses of "progress" and "development" speak to the desires and needs of local communities amid a deep economic crisis. At the same time, alliances are strengthened between corporations, the State, and media structures that sustain the dominant narrative and displace dissenting voices.
Without the need for any formal or explicit coordination –though it remains implicitly visible –this network of actors forms a communicational ecosystem that amplifies a shared message: hydrocarbon expansion is inevitable, necessary, and beneficial. That naturalization lies at the core of the dominant narrative.

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Media analysis

New media, old narratives

Based on an analysis of the regional information ecosystem, a less visible component in the construction of the dominant narrative was identified: the rapid emergence of new digital media outlets seemingly oriented toward reinforcing and multiplying the same extractivist discourse.

The focus was placed on active sponsored publications through a temporal and comparative analysis using the Junkipedia tool, with "Vaca Muerta Sur," "Punta Colorada," "Vaca Muerta Oil Sur," and "Golfo San Matías" as key search terms. The selected timeframe spanned from June 2024 to September 2025.

This consolidated dataset made it possible to identify publications, dates, estimated advertising spending, predominant themes, target audiences, reach, and narrative lines. The information was then systematized to detect communication behavior patterns and connections between the messages and the platforms that promote them.

In an initial phase, official and media narratives related to VMOS were examined, which made it possible to identify the overall structure of the dominant message. Building on that initial mapping, the monitoring of sponsored content opened an unexpected path: new information portals with no previous presence in the regional media ecosystem began to emerge. Individual analysis of each advertisement revealed that these sites had been recently created, in parallel with the advancement of hydrocarbon projects.

The manual and systematic compilation of data enabled comparisons of indicators, media classification, and the tracing of connections among actors. Despite certain limitations, such as the lack of formal academic training and the difficulty of accessing financial data online, open-source tools and specialized guidance supported and deepened the investigative process.

What became clear is that, over the past several months, a number of newly created news websites and Facebook pages have begun to populate Río Negro's information ecosystem. All of them share similar structural traits: recent creation (between 2024 and 2025), low levels of organic engagement, very few followers, and a high volume of sponsored posts. Many of them aimed at promoting extractive projects, particularly the Vaca Muerta Oil Sur (VMOS) project.

Although these pages have very few followers, their sponsored posts reach significant figures. Millions of accumulated impressions have been recorded—meaning millions

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of

instances in which advertisements appear on users' screens (which does not necessarily entail likes, comments, or other interactions). This enables a virtually unknown outlet to achieve massive reach: it does not rely on its actual audience, but rather on the financial investment used to amplify its messages. Advertising spending allows narratives with no prior grounding in the region to take hold, displacing genuine public debate and silencing local voices.

In this way, a message backed by heavy investment. rather than by the community, comes to appear as the majority view, while the absence of real participation is concealed behind these staged disinformation campaigns, deliberately designed to manufacture consensus and social legitimacy.

It is also evident that many of these outlets alternate pro-extractivist content with politically oriented posts that reinforce the provincial government's discourse while delegitimizing opposing or critical voices. This blend of messages—seemingly disconnected—appears to be part of a coherent communication strategy, in which the defense and reinforcement of the extractive model are intertwined with the consolidation of a regional political figure.

Relevant data overview

To conduct an in-depth analysis, three media outlets were selected: *Tiempos Australes*, *Pulso Sur*, and *Agarrá la Pala Río Negro*. They were chosen for their sustained volume of publications and for the role they play in the dissemination and reinforcement of hegemonic narratives. Follower counts and interaction levels correspond to the moment of data collection, though they are expected to continue rising as their digital reach and advertising investment grow.

Due to time and resource constraints, the research focused on these three cases, enabling a detailed analysis of their communication dynamics. However, we surveyed nine additional outlets with similar characteristics (twelve in total) which, although not studied in depth, also contribute to the reproduction and maintenance of the same narratives. The examples that follow are meant to illustrate a broader trend within the current media ecosystem and allow us to infer the likely existence of an even larger number of such "news outlets."

Below is a breakdown of media outlets and data that supports this analysis:

1- Tiempos Australes

Facebook: Tiempos Australes
-Type: News website / media outlet

-**Page created:** July 10, 2024

-**Administrators:** 10 (all located in Argentina)

-**Followers:** 255

-**Following:** 0

-Ads: Currently running active ads (social issues / political topics) *Meta Ad Library: Tiempos Australes*
Between September 26, 2024 and September 27, 2025, a total of 32 paid posts were published — all of them linked to VMOS.
-**Estimated spending:** ARS $526,000 – $618,968

-**Approx. impressions:** 1,790,000 – 2,120,000

Narrative focus:

Promotion of energy infrastructure and export-oriented development: VMOS oil pipeline, Punta Colorada port, and LNG as key drivers of Argentina's global positioning. Employment is mentioned, but the emphasis remains on macro-economic growth and "Argentina to the world."

Examples:

"Construction advances on the country's largest oil export terminal in Punta Colorada"
"With the leadership of Governor Alberto Weretilneck, the Punta Colorada Export Terminal near Sierra Grande has already reached 10% progress as part of the Vaca Muerta Oil Sur (VMOS) project, positioning Río Negro as a key player in the national energy sector. The inspection was led by Energy and Environment Secretary — and current candidate — Andrea Confini, together with Mayor Roxana Fernández."
Analysis: Reinforces international positioning and provincial leadership within the national energy sector.

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“Facundo López, Weretilneck’s closest ally: ‘We will defend Río Negro in Congress and prioritize investment and public education’”

"The Juntos Defendemos Río Negro Senate candidate emphasized his commitment to strategic investments in Vaca Muerta Sur, LNG projects, public infrastructure and the provincial public university. He highlighted that his coalition will prioritize federal development and local employment while defending Río Negro's interests in the Senate."
Analysis: Explicit integration of VMOS with political and electoral capital, centering federal representation and institutional legitimacy.

"VMOS bonus: Weretilneck secures 60 million pesos for the province's development"
"The funds, resulting from an agreement with the Vaca Muerta Oil Sur consortium, will be allocated to the construction of schools, hospitals, roadworks and sports facilities, as well as the purchase of educational technology and state-of-the-art medical equipment. This investment reaffirms the government's commitment to driving social and productive growth across Río Negro."
Analysis: Links extraction, public infrastructure, and social welfare, legitimizing oil revenues as a collective benefit.

Website: https://tiemposaustrales.com/

- 458 days old - Created on 2024-07-01
- Domain information

Excerpt:

Registry Admin ID: Not Available From Registry
Admin Name: REDACTED FOR PRIVACY
Admin Organization: Knock Knock WHOIS Not There, LLC
Admin Street: 9450 SW Gemini Dr #63259
Admin City: Beaverton
Organic traffic (domain including subdomains .
usando https://ahrefs.com/traffic-checker/)
Organic traffic 4 / Traffic value $0

2- Pulso Sur

Facebook: Pulso Sur - Facebook
-Type: News website / media outlet

-Date created: May 21, 2025

-**Administrators:** 6 (Argentina)

-**Followers:** 108

- Following: 0

-**Ads:** On social issues, elections, or political topics

Pulso Sur Ad Library

Between June 28, 2025 and September 28, 2025, a total of 40 paid posts were published, of which 24 were related to VMOS.

-**Estimated total spending for 40 posts:** ARS $503,000 – $617,460

-Estimated spending for 24 VMOS-specific posts: ARS $326,000 – $394,976

-**Approximate impressions for VMOS-specific posts:** 1,050,000 – 1,250,000

Narrative focus: VMOS is presented as the central financial tool to sustain social development and the continuity of public works in Río Negro. The messages highlight Governor Weretilneck's efficient management and the provincial capacity to generate progress through southern energy. / Celebratory and politically legitimizing tone, with a focus on provincial leadership.

Examples:

1- "**Weretilneck protects provincial resources: río negro maintains key works thanks to the vaca muerta oil sur bonus**"

The governor announced key projects to maintain development and growth in the province, which were made possible thanks to the use of the VMOS bonus, functioning to efficiently utilize provincial resources."

→ Links VMOS directly with the sovereign use of energy resources and internal development.

2- "Health: the new hospital for sierra colorada thanks to the vmos bonus"

"Governor Alberto Weretilneck announced new works in the province made possible by the signing of the VMOS bonus. These include projects at the Sierra Colorada hospital, which will focus on modernizing and equipping the facility with the latest technology."

→ Establishes a positive relationship between extractivism and social welfare (health as a political legitimizer).

3- "Weretilneck launches paving of access to san javier with vmos bonus funds"

"The project, financed through the VMOS bonus, the mechanism created by the agreement between the Río Negro government and the Vaca Muerta companies, includes paving, a temporary bypass, lighting, and signage, improving connectivity in the municipality. The bid opening was conducted publicly as part of the tender process."
→ Positions VMOS as a driver of connectivity and employment in the provincial territory.

Website: https://pulso-sur.com/

-140 days old - Created on 2025-05-20
- Domain information
Excerpt:

Registry Tech ID: Not Available From Registry
Tech Name: REDACTED FOR PRIVACY
Tech Organization: Knock Knock WHOIS Not There, LLC
Tech Street: 9450 SW Gemini Dr #63259
Tech City: Beaverton
Organic traffic (domain including subdomains .
usando https://ahrefs.com/traffic-checker/)
Organic traffic 0 - Traffic value $0

3- Agarra la Pala Río Negro

Facebook: Agarrá la Para Río Negro Facebook
-Type: News website / media outlet

-Date created: April 7, 2025

-Administrators: 5 (Argentina)

-Followers: 203

-Following: 0

Ads: Currently has active ads (social/political topics)
Ad Library: Agarrá La Pala RN
-Period analyzed: July 31, 2025 – September 15, 2025

-**Total paid posts:** 13, of which 6 were related to VMOS

-**Estimated total spending for 13 posts:** ARS $139,100 – $173,187

-**Estimated spending for 6 VMOS-specific posts:** ARS $49,100 – $61,194

-**Approximate impressions for VMOS-specific posts:** 200,000 – 240,000

Narrative focus: Pro-management and "projects that transform lives." Health, education, and employment are emphasized. VMOS is positioned as a driver of provincial development and as evidence of "efficient" governance that counters national criticism.

Examples:

1- **"Historic: more than ARS $1.4 billion invested thanks to the Vaca Muerta Oil Sur bonus** "While the national government stays uninvolved, Weretilneck continues building in Río Negro. In Sierra Grande, the multipurpose room of School No. 60 and ESRN 39 will be expanded
Defending means managing decisively!"
→ Reinforces the narrative of investment, public works, and provincial governance linked to VMOS.

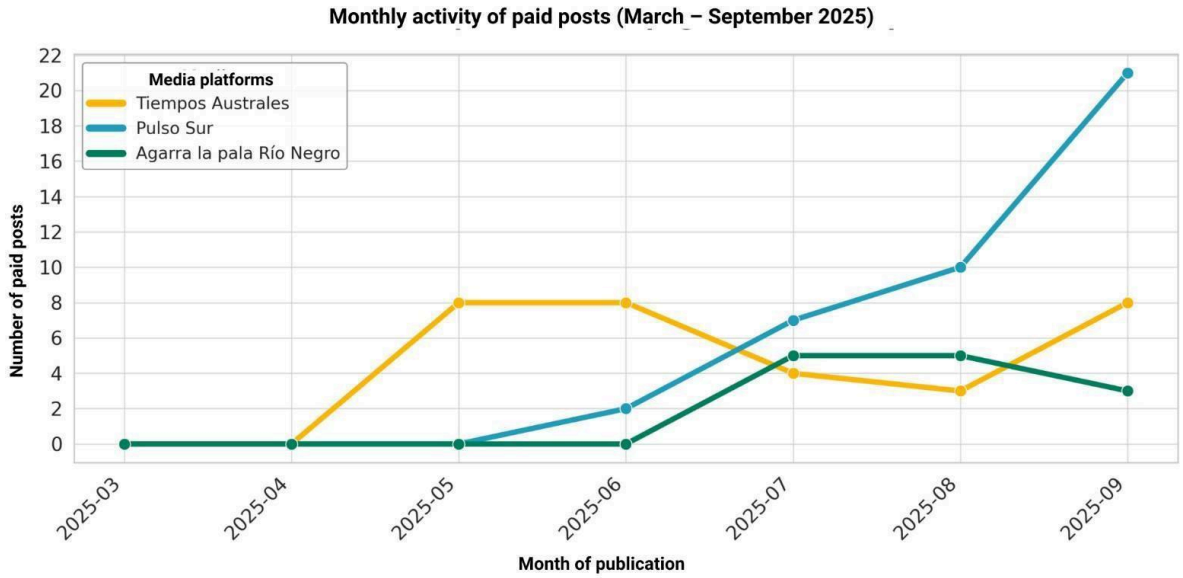
2- **"Weretilneck fights for Río Negro and the results are visible: the first payment from the VMOS bonus is already driving key works in San Antonio. Works that will generate jobs and progress for the people of Río Negro. 'Because defending is building"**
→ Directly associates VMOS with employment and progress in the province.

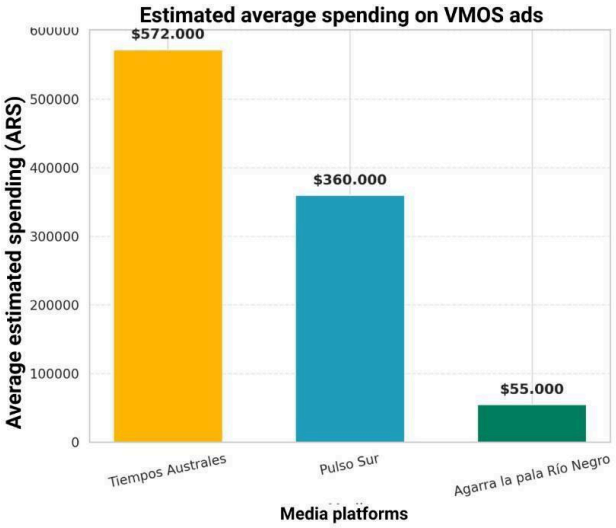
3- **"With VMOS funds, Weretilneck ensured that wealth stays in Río Negro and is transformed into works: hospitals, schools. This is not rhetoric, it is defending the province through action"**
→ Connects financing, health, and education as concrete results of VMOS.

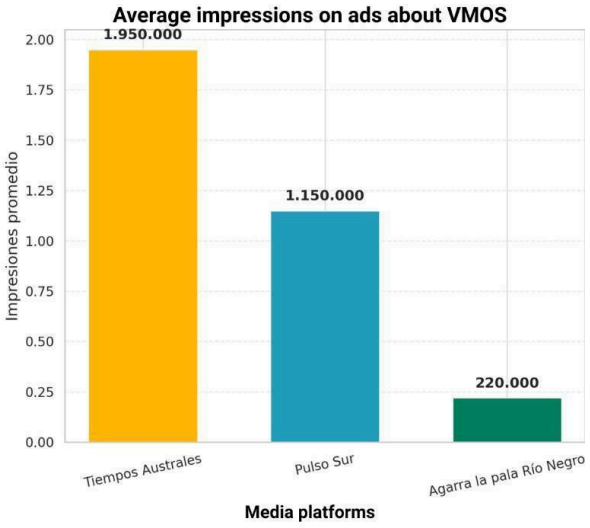
Website: https://agarralapalarionegro.com/

-178 days old - Created on 2025-04-07
-Domain
information Excerpt:
Registry Admin ID: Not Available From Registry
Admin Name: REDACTED FOR PRIVACY
Admin Organization: Knock Knock WHOIS Not There, LLC
Admin Street: 9450 SW Gemini Dr #63259
Admin City: Beaverton
Organic traffic (domain including subdomains . usando

https://ahrefs.com/traffic-checker/
) Organic traffic 0 - Traffic value $0







Additionally, below is information on other media outlets that have similar characteristics to those previously described:

4- Río Negro al Frente

FACEBOOK: Rio Negro al Frente - Facebook
-Type: News website / media outlet

-**Date created:** March 10, 2025

-**Administrators:** 7 (all from Argentina)

-**Followers:** 439 • **Following:** 0

-**Ads:** Currently has active ads on social issues, elections, or political topics
Website: https://rionegroalfrente.com/
-204 days old - Created on 2025-03-12
-Domain information Excerpt:
Registry Tech ID: Not Available From Registry
Tech Name: REDACTED FOR PRIVACY
Tech Organization: Knock Knock WHOIS Not There, LLC
Tech Street: 9450 SW Gemini Dr #63259
Tech City: Beaverton
- Organic traffic (domain including subdomains .
usando https://ahrefs.com/traffic-checker/)
Organic traffic 0 / Traffic value $0

5- Línea Nacional

-**Type:** News website / media outlet
-**Date created:** February 11, 2025

-**Administrators:** 11 (Argentina)

-**Ads:** Yes, on social issues, elections, or political topics
-**Ad Library:** Línea Nacional
Website**:**
https://lineanacional.com/
-267 days old - Created on 2025-01-13

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-Domain information

Excerpt:
Registry Admin ID: Not Available From Registry
Admin Name: REDACTED FOR PRIVACY
Admin Organization: Knock Knock WHOIS Not There, LLC
Admin Street: 9450 SW Gemini Dr #63259
Admin City: Beaverton
Organic traffic (domain including subdomains .
usando https://ahrefs.com/traffic-checker/)
Organic traffic 0 / Traffic value $0

6- Orgullo Rionegrino

FACEBOOK: Orgullo Rionegrino Facebook
-Type: News website / media outlet
-Date created: March, 10 2025

-**Administrators:** 6 (Argentina)

-**Followers:** 1.000

-**Following:** 0

-**Ads:** Currently active on social issues, elections, or political topics
-Ad Library: Orgullo Rionegrino
Website**:** https://orgullorionegrino.com/
- 209 days old - Created on 2025-03-12
- Domain information Excerpt:
Registry Tech ID: Not Available From Registry
Tech Name: REDACTED FOR PRIVACY
Tech Organization: Knock Knock WHOIS Not There, LLC
Tech Street: 9450 SW Gemini Dr #63259
Tech City: Beaverton
Organic traffic (domain including subdomains .
usando https://ahrefs.com/traffic-checker/)
Organic traffic 0 - Traffic value $0

7- El Mirador Noticias

FACEBOOK: El Mirador Noticias Facebook
-**Type:** News website / media outlet
-Date created: July 29, 2025

-**Administrators:** 6 (Argentina)

-**Followers:** 59 • **Following:** 0

-**Ads:** Currently active on social issues, elections, or political topics
-Ad Library: El Mirador Noticias

Website:
https://elmiradornoticias.com/ 475
days old - Created on 2024-06-19
Domain information
Excerpt:
Registry Tech ID: Not Available From Registry
Tech Name: REDACTED FOR PRIVACY
Tech Organization: Knock Knock WHOIS Not There, LLC
Tech Street: 9450 SW Gemini Dr #63259
Tech City: Beaverton
Organic traffic (domain including subdomains .
usando https://ahrefs.com/traffic-checker/)
Organic traffic 0 - Traffic value $0

8- Bandera del Sur

FACEBOOK: Bandera del Sur Facebook
-**Type:** News website / media outlet
-Date created: June 27, 2025

-Administrators: 8 (Argentina)

-Followers: 703

-**Following:** 0

-Ads: Currently active on social issues, elections, or political topics
-**Ad Library:** Bandera del Sur
Website:
https://banderadelsur.com/
-102 days old - Created on 2025-06-27

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-Domain information

9- Radar del interior

FACEBOOK - Radar del interior
-Type: News website / media outlet
-**Date created**: August 8, 2025

- **Administrators**: 8 (Argentina)
- **Followers:** 343
-**Following:** 0

-Ads: Yes, on social issues, elections, or political topics
-**Ad Library:** Radar del Interior
Website:
https://radardelinterior.com/
- 62 days old - Created on 2025-08-06 Domain information

10- La Estrella del Sur

FACEBOOK: La Estrella del Sur Facebook
-Type: News website / media outlet

-Date created: July 10, 2024

-Administrators: 10 (Argentina)

-Followers: 217

-Following: 0

-Ads: Yes, on social issues, elections, or political topics
-Ad Library: La Estrella del Sur

11- Punto de Vista Noticias

FACEBOOK: Punto de Vista Noticias Facebook
-**Type:** News website / media outlet
-**Date created:** January 30, 2025

-**Administrators:** 10 (Argentina)

-**Followers:** 211

-**Following:** 0

-Ads: Yes, on social issues, elections, or political topics
-**Ad Library:** Punto de Vista Noticias
Website:
https://puntodevistaweb.com/ 270
days old - Created on 2025-01-10

Domain information

12- La Directa

FACEBOOK: La Directa - Facebook
-Type: News website / media outlet

-Date created: February 5, 2025

-Administrators: 9 (Argentina)

-Followers: 150

-Following: 0

-Ads: Yes, on social issues, elections, or political topics
-Ad Library: La Directa

Website: https://ladirectaweb.com/

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Conclusion

A (dis)informative network at the service of extractivism?

Between June 2024 and September 2025, approximately 200 paid posts were recorded across the twelve digital media outlets investigated. These figures only include ads with financial investment—excluding organic posts—and reflect an estimated total expenditure of between 3,500,000 and 4,200,000 Argentine pesos (ARS). Altogether, these ads generated between 10,600,000 and 12,500,000 impressions, providing a sense of the real amplification capacity these media achieve through digital advertising.

The results show a sustained trend: the rapid creation of digital media outlets with limited actual reach but high amplification potential through paid ads. These portals act as repeaters of the pro-extractive discourse, which links regional development and social welfare to the expansion of hydrocarbon infrastructure. The dominant narrative combines and expands official discourse with concepts of works, investment, energy, and the future, creating a communication "package" that reaches diverse audiences.

This evidence allows us to identify a silent yet significant transformation of the communication ecosystem in Río Negro. Within this framework, advertising functions as a legitimizing device, providing volume, continuity, and the appearance of credibility to media outlets without real territorial presence. The multiplication of broadcasters generates an illusion of informational diversity and social consensus around extractive projects. This aligns with recognized mechanisms of climate disinformation, in which political and corporate actors deploy local media and supposedly "neutral" narratives to conceal impacts and normalize fossil expansion.

Taken together, this seems to configure a new phase of the communication apparatus associated with the extractivist model: the mass production of low-apparent-impact media that operate as instruments for establishing and normalizing hegemonic narratives, presenting hydrocarbon expansion as synonymous with development and the future, while climate risks and threats are minimized or directly rendered invisible.

Peaks of activity, tonal coincidences, and the repetition of common phrases suggest the existence of a planned dissemination strategy. This operation resembles what is known as *Pink Slime*: networks of sites that present themselves as local media while spreading political content through low-cost and automated structures, as documented by international research on this phenomenon. In the case of Río Negro, the simultaneity of

messages and the repetition of narrative frames seem to configure a communication network that reinforces public acceptance of "hydrocarbon development," simulating informational diversity and broad territorial support.

These practices align with patterns of climate disinformation, particularly those aimed at naturalizing fossil projects as inevitable and beneficial, while minimizing or leaving out socio-environmental risks and local controversies.

Far from the logics of traditional journalism, this communication network articulates a homogeneous narrative that promotes hydrocarbon expansion as an inevitable horizon of progress and collective well-being. It is not just information: emotions, expectations, and perceptions about the province's future are constructed, aligned with political and corporate interests. This operation is consistent with documented tactics of climate disinformation, which aim to reduce the perception of harm, amplify hypothetical benefits, and blur the line between information and propaganda. Within this logic, socio-environmental impacts are left out of the picture, while fossil projects are presented as "necessary" and without viable alternatives.

The temporal overlap of the data shows that the increase in publications coincides with key institutional moments of the Vaca Muerta Oil Sur project, reinforcing the official narratives of the provincial government and YPF. This synchrony suggests that communication does not respond to the informational flow but rather to a strategic agenda aimed at legitimizing the project.

This constant flow of messages, centered on "employment," "investment," and "future," directly intervenes in the construction of common sense: it shifts the focus of conflict and reframes public debate as a false dichotomy between "progress" and "resistance." In this way, narratives that for decades defended the territory are increasingly challenged by new stories that present extractive expansion as a tangible improvement in everyday life.

For coastal communities that have historically protected the sea and their way of life, this narrative shift is far from innocuous: it seeks to rewrite identities, expectations, and legitimacy, eroding society's capacity to question the present and future harms of fossil expansion.

The sustained pattern of media creation, with discursive, temporal, and thematic coincidences, is hardly attributable to chance. All evidence points to the existence of a large-scale communication operation of disinformation.

A network that, under the appearance of plurality, seems intent on reorganizing the common perceptions of the territory, attempting to turn the fierce and destructive extractive advance into a new and "acceptable" normality.

Notes

This work constitutes an initial stage within an ongoing research process. The data collected and the correlations observed allow us to glimpse a complex scenario, shaped by disinformation practices that directly influence the construction of common sense around the extractivist model.

The study could continue to grow in scale and scope, incorporating additional analytical dimensions and strengthening its empirical base. This first approach lays the groundwork for future stages that expand understanding of the links between communication, power, and territory, and that further reveal how global climate disinformation mechanisms operate at the local level.

In this way, a process of collective information and understanding is opened in response to narratives that distort, conceal, and manipulate information. Deepening this line of research entails continuing to expand this process, strengthening the community's capacity to identify and dismantle these communication mechanisms, and building shared tools to counteract them.

References

1) H. Pérrez Orsi, A. Sendón - Centro de investigación y acción - *Entrevista personal y apoyo remoto a la investigación.*

2) Muñoz Moreda C., Agrelo M., Fernández Ajó A., Marón C. y Sironi M. - Foro para la Conservación del Mar Patagónico y Áreas de Influencia - *Ballena franca*

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desarrollo hidrocarburífero en el Golfo San Matías, Argentina. Implicancias ecológicas y potenciales riesgos.- - (2025) https://ballenas.org.ar/riesgos-para-la-ballena-franca-austral-un-informe-tecnico-adv ierte-sobre-los-proyectos-hidrocarburiferos-en-el-golfo-san-matias/

3) Páez Campos, R. - Foro para la Conservación del Mar Patagónico y Áreas de Influencia. WCS Argentina - *Modelado de trayectoria de derrames de hidrocarburos en el Golfo San Matías, Argentina* (2025) https://argentina.wcs.org/es-es/Quienes-somos/Noticias/articleType/ArticleView/articleId/24858.aspx

4) Asociación Argentina de Abogados/as Ambientalistas y el Colectivo de Acción por la Justicia Ecosocial (CAJE) - *Rechazo al inconstucional avance de la industria petrolera y gasífera en el Golfo San Matías* - (2023) -https://aadeaa.org/el-inconstitucional-avance-del-petroleo-y-gas-en-golfo-san-matias/

5) Juan Antonio Acacio y Gabriela Wyczykier - Fundación Ambiente y Recursos Naturales - *Un mar azul para un futuro común. Conflictos y resistencias frente al avance fósil en Argentina* - (2024) ,https://farn.org.ar/wp-content/uploads/2024/08/Un-mar-azul-para-un-futuro-comun.-Conflictos-y-resistencias-frente-al-avance-fosil-en-la-costa-argentina_compressed.p df

6) Wildlife Conservation Society (WCS Argentina) – *La Ley 3308 y la protección del Golfo San Matías* – (2023) https://argentina.wcs.org/es-es/Quienes-somos/Noticias/articleType/ArticleView/articleId/18016.aspx

7) Foro para la Conservación del Mar Patagónico y Áreas de Influencia – *Organizaciones ambientalistas rechazan la modificación de la Ley 3308 de Río Negro para seguir protegiendo el Golfo San Matías* – (2023) https://marpatagonico.org/organizaciones-ambientalistas-rechazan-la-modificacion-d e-la-ley-3308-de-rio-negro-para-seguir-protegiendo-el-golfo-san-matias/

8) Observatorio Petrolero Sur (OPSur) – *Golfo San Matías: organizaciones logran suspender la audiencia pública por el oleoducto* – (2023) https://opsur.org.ar/2023/03/20/golfo-san-matias-organizaciones-logran-suspender-l a -audiencia-publica-por-el-oleoducto/

9) Delfino, Emilia – *Vaca Muerta Sur: diez claves sobre el oleoducto de YPF y el conflicto social y ambiental alrededor de la obra – ElDiarioAR* – (2023) https://www.eldiarioar.com/sociedad/medio-ambiente/vaca-muerta-sur-diez-claves-o l eoducto-ypf-conflicto-social-ambiental-alrededor-obra_1_10468420.html

10) Greenpeace Argentina – *Alerta: el Golfo San Matías, pulmón de la Península Valdés, en peligro* – (2023) https://www.greenpeace.org/argentina/story/problemas/oceanos/alerta-el-golfo-san-matias-pulmon-de-la-peninsula-valdes-en-peligro/

11) Legislatura de la Provincia de Río Negro – *Ley 3309: modificación del régimen de protección ambiental del Golfo San Matías* – (2022) https://web.legisrn.gov.ar/legislativa/legislacion/ver?id=3309

12) Asociación Argentina de Abogados/as Ambientalistas (AAdeAA) – *Publicaciones sobre el Golfo San Matías* – (2023–2025) https://aadeaa.org/tag/golfo-san-matias/

13) Observatorio Petrolero Sur - (OPsur) – *Vaca Muerta: 5,6 incidentes ambientales por día*– (2022)

https://opsur.org.ar/2022/05/26/el-otro-record-de-vaca-muerta-56-incidentes-ambien tales-por-dia/

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Who Bears the Weight of the Cloud?

An analysis of official discourses, propaganda and disinformation regarding the environmental destruction caused by data centers in Brazil.

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TABLE OF CONTENTS

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Climate Action Against Disinformation

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Abstract

With advances in technology, information processing, and the artificial intelligence market, there is also a need to improve infrastructure, which tends to override the resulting socio-environmental impacts. The main objective of this study is to examine what information about the installation of data centres has been disclosed in Brazil, what the narrative surrounding these projects is, and how it has been perceived by the population. To this end, we analyse the discourse and dissemination of information about this technology, how it is presented by the government and the media, and how it has been perceived by people living near the construction sites, especially through community surveys in Fortaleza (CE), Eldorado do Sul and Guaíba (RS). The aim is to assess whether there is a perception of impacts such as massive consumption of drinking water, increased energy demand, and land conflicts. In addition, official government agencies were contacted through Brazil's Access to Information Act (LAI) to request documentation of environmental impact assessments related to the planned data centre facilities. This report does not seek to erase or appropriate the ongoing resistance led by frontline advocates, but rather to glimpse how disinformation affects their surroundings, often isolating the agenda they raise from the rest of the population equally affected by environmental impacts. In conclusion, the report argues that Brazil's current digital infrastructure development model is characterised by opacity, disinformation and environmental neglect, reinforcing social and ecological injustice. It calls for a collective shift from isolated resistance to shared responsibility, based on transparency, inclusive governance and the recognition that the damage caused by digital expansion is neither invisible nor inevitable.

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Introduction

The expansion of digital infrastructure has been announced by the Brazilian government as an essential milestone for economic development, technological modernisation and the affirmation of the state's national sovereignty. In his speech at the United Nations General Assembly in September 2025, President Luiz Inácio Lula da Silva included Brazil's commitment to expanding its digital infrastructure among the central themes. Along with topics such as digital sovereignty, internet governance, and data protection, the president emphasised the development of sustainable data centres as a fundamental pillar of the country's technological agenda (Mauzi et all, 2025). This speech echoes the stance adopted by the federal government. In the same month, Brazil's Minister of Finance, Fernando Haddad, emphasised the strategic importance of national data processing, noting that 'only 40% of Brazilian data is processed within the country, while the rest is sent abroad, outside the scope of our data protection laws' (Agência Brasil, 2025 a).

This official discourse of progress and sovereignty, however, conceals a fundamental tension between the presentation of sustainability and modernisation as central objectives, and the systematic disinformation or obfuscation of their concomitant environmental and social impacts. Within this context, disinformation, which can be defined as the deliberate fabrication of information to mislead publics and foster a distorted comprehension of an issue, functions as a pivotal mechanism for moulding public perception. Despite its frequent presentation as fact-based, such information is intrinsically false, misleading, or incomplete. Consequently, this study examines the operation of this tactic within the narrative promoting data centre expansion in Brazil, with specific attention to its role in masking environmental damage and constraining democratic oversight.

In fact, the Brazilian government has shown a growing interest in setting up data centres in recent years, even though they process data from foreign companies and not necessarily elements relating to the national population. One of the first formal initiatives in this regard was the comprehensive study released in June 2023 by the Ministry of Development, Industry, Trade and Services (MDIC) in collaboration with the Brazilian Industrial Development Agency (ABDI), focusing particularly on data centres. This document describes the country's potential to expand and upgrade its digital infrastructure by nationalising large-scale data processing (Ministério do Desenvolvimento, Indústria, Comércio e Serviços 2023).

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The study does not omit the issue of environmental impacts. In fact, it addresses concerns related to environmental sustainability, with the report (starting on page 314) recognising the high energy consumption and carbon emissions normally associated with these facilities. It is precisely in this context that the issue of renewable energy comes into play in matters related to data centre facilities. The report goes on to recommend alternatives such as renewable energy sources (e.g., solar and wind) and waterless cooling systems as strategies to mitigate these impacts. The Ministry of the Environment is also cited as a critical stakeholder in ensuring sustainable implementation. It should be noted, however, that the report also draws an analogy with other existing facilities, such as those in the state of Wyoming in the US, where the local government has eliminated environmental licensing requirements for data centres on the grounds that they have 'minimal environmental impact' (p. 172). When juxtaposed, these two pieces of information raise the question of whether the report really advocates for the participation of government environmental agencies.

A few years after this study, the government launched the Special Taxation Regime for Data Centre Services (REDATA), which reduces taxation on infrastructure and equipment related to the installation of data centres. This measure reduces the cost of building this infrastructure, seeking to attract more investment to the country. In summary, the proposal indicates that companies must invest 2% of their acquisition costs in national research, innovation, and industrial development programmes and offer at least 10% of their processing capacity to the domestic market. For enterprises located in the North, Northeast, and Central-West regions, these obligations may be reduced by 20% (Câmara dos Deputados, 2025).

These fiscal and regulatory mechanisms are part of a broader public policy framework known as the "Strategy for Implementing Public Policies to Attract Data Centres," last updated in July 2025 (Ministério do Desenvolvimento, Indústria, Comércio e Serviços, 2023). Although this strategy presents itself as forward-looking and environmentally responsible —requiring, for example, the use of 100% clean or renewable energy, minimal water consumption, and proof of zero carbon emissions from the outset (Article 11-B of MP 1318/2025) —it is not clear how data centres that are being or have been installed comply with this sustainability requirement. It is noteworthy, for example, that nothing is said about the disposal of electronic waste generated by this installation. In addition, land rights, ecological disruption, community displacement and lack of transparency, especially at the local level, continue to be contested.

Although the REDATA policy and the MDIC/ABD study establish sustainability criteria, they do not require public consultation or mechanisms to ensure that communities in affected regions are fully informed. The prevailing narrative in this implementation is linked to progress, and local voices denouncing the environmental and social impacts of these infrastructures are minimised or obscured.

This narrative of progress over the environment is not exactly new, given that the development of infrastructure for digital modernisation often reproduces extractivist and colonial logics, serving transnational data interests and often neglecting local livelihoods, environmental limits and democratic oversight (Roberts & Montoya, 2023 and Ballari et al., 2025).

Currently, in Brazil, there are already signs of resistance from the affected population, but these narratives are not always highlighted or given equal consideration to those related to supposed progress and economic gains. The environmental issue is therefore underestimated amid the enormous amount of positive information about data centres disseminated by the same communication channels. This framing isolates resistance, diffuses responsibility and limits public debate.

It is amid this scenario of selective communication and deliberate disinformation that this research emerges, seeking to investigate in depth how narratives about data centres are constructed in Brazil, how transparency is demanded or denied, and how affected communities are informed or disinformed. More specifically, the study aims to evaluate the extent of disinformation surrounding the environmental impacts generated by data centres in Brazil. This will be achieved through an analysis of how news related to data centres has been reported between January and September 2025, combined with two case studies (Ceará and Rio Grande do Sul) based on public consultation processes and inquiries with environmental impact assessment bodies at municipal, state, and federal levels. Accordingly, this research seeks to answer the following questions: what are the environmental and social impacts of the new data centres in Brazil? How is disinformation used to obscure these impacts? What resistance movements have emerged and how are they portrayed? And how are local communities informed, or disinformed, about projects implemented in their territories?

The importance of this investigation lies in challenging the narrative of non damage, considering that the impacts are being actively concealed through policy design, selective communication, and regulatory opacity. By analysing not only the existing discourse, but also how it reaches and is perceived by the population, this report seeks to

contribute to ongoing debates on digital colonialism, environmental injustice, and technopolitics in Brazil.

Literature review

Why talk about the environmental impact of data centers?

Before delving into the environmental impacts of data centres, it is important to understand the subject of this research. The expansion of data centres in Brazil, promoted under the narrative of a "digital and green" economy, conceals profound environmental impacts that challenge the very notion of their sustainability. Although government discourse frequently highlights Brazil's predominantly renewable energy matrix as a key competitive advantage (Ministério de Minas e Energia, 2023), the construction and operation of this infrastructure produce a substantial ecological footprint. The installation of hyperscale facilities requires vast tracts of land, large quantities of construction materials, and significant amounts of rare earth elements, fuelling extractive supply chains that are closely linked to deforestation, land-use conflicts, and
socio-environmental degradation (Stacciarini & Gonçalves, 2025; Neves, 2023; Venditti, 2023). Projects such as the Scala AI City, occupying approximately seven million square metres, illustrate the territorial intensity and material demands of this sector (Data Centre Dynamics, 2024).

During operation, energy requirements are colossal. The country's installed capacity is projected to increase from 1 GW to 8 GW, potentially requiring 17,716 MW by 2038, an amount equivalent to the electricity consumption of a city of 43 million inhabitants (Veras Mota, 2025). While part of this supply derives from renewable sources, hydropower, solar, and wind generation each carry their own environmental burdens, including ecosystem alteration, community displacement, and the intensive use of water and land (Giongo, Mendes & Santos, 2015; Martins, R., 2025; Meireles, 2011). In addition, data centre cooling systems consume billions of litres of freshwater annually, competing directly with local supply and exacerbating regional water stress (Pengfei et al., 2025).

The resulting pollution is multidimensional, encompassing greenhouse gas emissions estimated at between 1.7% and 2.8% of the global total (Freitag et al., 2021) and an ever-growing stream of electronic waste, inadequately regulated by the REDATA framework. This lifecycle, from mineral extraction to disposal, generates a

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continuous chain of environmental degradation.

Furthermore, the spatial distribution of these facilities frequently produces what have been described as “green sacrifice zones,” where the social and ecological costs of digital infrastructure are externalised to vulnerable territories and populations (Zografos & Robbins, 2020; Sovacool, 2021). The systematic exclusion of environmental authorities, such as the Ministry of the Environment, from policy discussions on the sector (Martins, L., 2025a) further aggravates this dynamic. It reflects a pattern of deregulatory governance that prioritises economic expansion over genuine sustainability and environmental justice. In addition to environmental burdens, the narrative of job creation in the data centre sector is largely misleading. Employment opportunities are mostly concentrated in the construction phase, with operational roles remaining very limited due to automation and the need for highly specialised staff (Delfanti & Frey, 2020; Tozzi, 2023). Large projects such as Scala AI City and TikTok’s facility in Ceará may generate thousands of temporary jobs, yet permanent positions often consist of only a few dozen employees, frequently filled by foreign specialists (Damasceno, 2025; The Wall Street Journal, 2025). As a result, the
long-term socio-economic benefits for host communities are minimal, highlighting a significant gap between promotional discourse and actual local development outcomes.
This preliminary analysis does not aim to provide an exhaustive account of all matters related to data centres. Rather, it seeks to situate the ongoing debates concerning the environmental impacts of these constructions and mega-projects, with particular attention to the Brazilian context.
The primary objective of this research is to examine whether, and to what extent, the prevailing narrative is shaped by disinformation; that is, by the deliberate fabrication of information intended to mislead the public and foster a distorted understanding of the issue (CAAD, 2022). For that aim, the 5 D Model of Disinformation framework, which considers, “Dismiss, Distort, Distract, Dismay, Divide” was considered. Each one of those aspects encompass what frames the current disinformation model, making it possible to see if and how the discourse of data centers in Brazil fits the disinformation category.
In this way, it is important to clarify that "dismiss" refers to trying to undermine credibility by attacking or discrediting the source, so that the claim itself is ignored, while "distort" distorts or selectively presents facts, using partial truths to create misleading impressions, while "distract" redirects attention from the main issue to irrelevant or secondary topics, "dismay" induces cynicism or helplessness, discouraging engagement or public scrutiny; and finally, "divide" inflames social and identity tensions, eroding collective trust and solidarity(DOROSHENKO and Lukito, 2021).

A critical comprehension of how such strategies operate in projects that inflict environmental and social harm is, therefore, crucial to understanding the political and societal framing of data centre expansion in Brazil. Nevertheless, more detailed information on this complex process involving the implementation of data centers, their construction materials, their consumption and environmental and social impact, even with the use of renewable energy, can be found in the complementary report to the research entitled "Data Centers and its environmental impacts in Brazil: a brief overview".

Methodology

To address the research questions and objectives, this study employed a mixed-methods approach, combining discourse analysis, empirical fieldwork, and technical estimation. These three interconnected strategies were designed to capture not only the dominant narratives surrounding data centre installations in Brazil, but also the perspectives of communities directly impacted by these projects and the projected environmental consequences based on analogous global cases.

The first component consisted of a discourse analysis of national media coverage related to data centres in Brazil. This analysis focused on the period between January and 30 September 2025 and examined how the topic was framed in the country's most accessed news sources. Specifically, the five leading digital news portals were selected based on readership rankings (Prisco, 2025), along with the major national television networks: Globo, RecordTV, SBT, Band, and RedeTV!. These networks are widely recognised for their national reach and influence in Brazilian broadcast media. In addition, the analysis also considered Brazil's most widely circulated print newspapers. According to circulation rankings (Yahya, 2024), the leading national dailies are *O Estado de S. Paulo* (*Estadão*), *Folha de S. Paulo*, and *O Globo*. As *O Globo* had already been included in the review through its television network and digital platforms, it was not counted twice. This approach ensured comprehensive coverage of the media landscape while avoiding duplication across different branches of the same media group. Together, these sources provide a robust dataset for assessing how narratives around data centres circulate in Brazil's mainstream media.

The second methodological component was an empirical investigation involving communities in three Brazilian cities: Fortaleza (CE), Eldorado do Sul (RS), and Guaíba (RS), all of which are sites of planned or ongoing data center construction. A structured

questionnaire was developed and distributed to residents in these areas. The survey inquired about participants' awareness of the data center projects, their sources of information, perceived environmental risks, and whether they knew how or where to seek institutional support or file complaints. Respondents were also invited to share open-ended comments regarding the potential impacts on their communities. At the end of the questionnaire, they were asked whether they would like to be contacted via email to receive further information about data centers, tools for community engagement, and legal resources related to environmental and housing rights. This aspect of the methodology aimed to combine data collection with participatory engagement, acknowledging that informed communities are essential to the democratization of infrastructure planning.

To complement public data and community responses, the study directly contacted public authorities through Brazil's Access to Information Law (LAI). Formal requests were sent to government agencies responsible for environmental regulation and infrastructure development to determine whether Environmental Impact Assessments (EIAs) had been conducted or made publicly available for the planned data centre projects. Questions were forwarded to the government of Ceará, the government of Rio Grande do Sul, and the municipalities of Fortaleza, Eldorado do Sul, and Guaíba. The absence or lack of clarity in official responses was analysed as an indicator of institutional opacity and as a barrier to democratic participation in infrastructure planning.

Rationale for the Approach and Challenges Encountered

The selection of research sites was based on two main criteria: (1) the official announcement of data center projects and (2) the preexisting socio-environmental vulnerabilities in the regions. Geographic diversity was also considered, with Fortaleza representing the semiarid Northeast region and Eldorado do Sul and Guaíba representing the flood-prone South. Each region presents distinct but equally pressing environmental challenges. Furthermore, the populations most likely to be impacted share common characteristics in terms of marginalization—whether by race, class, or geography. In Fortaleza, the community is already socially and economically vulnerable. In addition, Indigenous peoples are among those resisting the invasion of their territory; in Eldorado do Sul, many residents remain displaced after the severe floods of 2024, with limited access to safe housing and public services. In both contexts, the study sought to center

the perspectives of those most affected, rather than relying solely on institutional sources or top-down knowledge.
The study, however, faced some logistical challenges, such as time and the impossibility of interviewing people in person. Since the study was conducted over a two-month period, both the level of engagement and the number of responses were limited. Ideally, the survey should be extended over at least six months and include on-site participation in the target regions. This would help raise awareness of the research, encourage broader participation, and generate a more robust and representative dataset.
However, since the survey could not be conducted in person, strategies were used to disseminate the questionnaire via social media, partnerships were established with other organizations that agreed to support the project, and research centres focused on disinformation, the environment, and human mobility were contacted. Despite its limitations, the results already offer valuable insights and highlights the need for further investment in this strategy.
An important remark is that this research does not intend to speak on behalf of the communities affected, nor to subordinate their political action, and already resistance strategies, to an external academic framework. Instead, it aims to contextualize and expand their actions within a broader systemic analysis.

Results

Media narratives

The analysis focused on how data centres were presented in Brazilian mainstream media between 1 January and 30 September 2025. Sources were selected based on national reach and influence, combining broadcast and print/digital platforms. For television, the five largest open-access networks were considered: Globo, SBT, RecordTV, Band, and RedeTV!. Globo was included only once, despite its dual presence as both the country's largest broadcaster and one of the top three most accessed online platforms, to avoid double counting. In the print sector, the analysis incorporated the three leading national newspapers by circulation and digital access – *Folha de São Paulo*, *O Estado de São Paulo*, and *O Globo*. Because *O Globo* belongs to the same group as TV Globo, the content was consolidated into a single category.
Inclusion criteria covered all pieces where data centres were either the central topic or explicitly framed as an "objective to be met by an agenda," "an asset," or "gain." Reports

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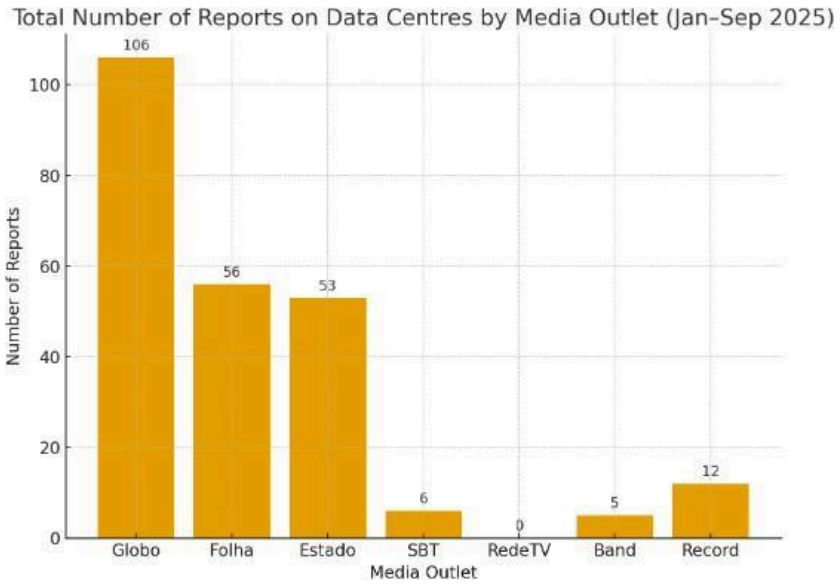
which “data centre” was mentioned without explanation or contextualisation were excluded. This ensured that the corpus consisted of substantive reporting rather than incidental references.

Overall coverage

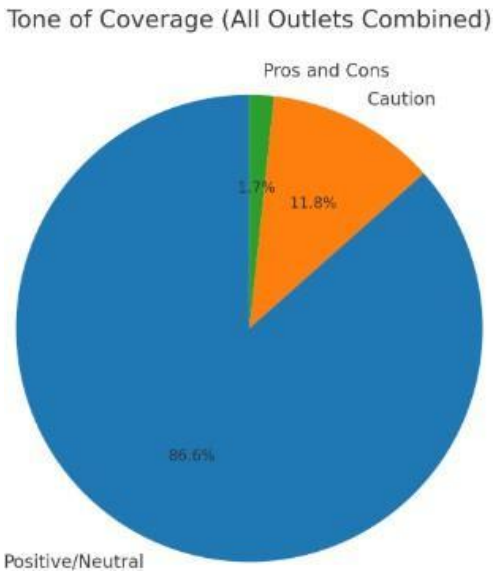
Across all sources, 238 distinct reports were identified. Globo accounted for 106 reports (44.5%), *Folha de São Paulo* for 56 (23.5%), *O Estado de São Paulo* for 53 (22.3%), RecordTV for 12 (5%), SBT for 6 (2.5%), and Band for 5 (2%). Notably, RedeTV! did not produce a single report on the subject during the period examined.



Tone of coverage

In order to conduct this research, the tone in which the coverage was presented was analysed according to the main message presented. Reports were categorised as positive/neutral when they were associating data centres with progress, investment, infrastructure, technological development, or presenting neutral factual updates (such as sales, construction, or business negotiations). It was considered cautionary when raising environmental concerns, highlighting risks such as water scarcity, land conflicts, or the need for regulatory oversight. And finally, it was considered moderate when pointing out “Pros and Cons”, since they were presenting arguments from different perspectives in almost equal proportion.

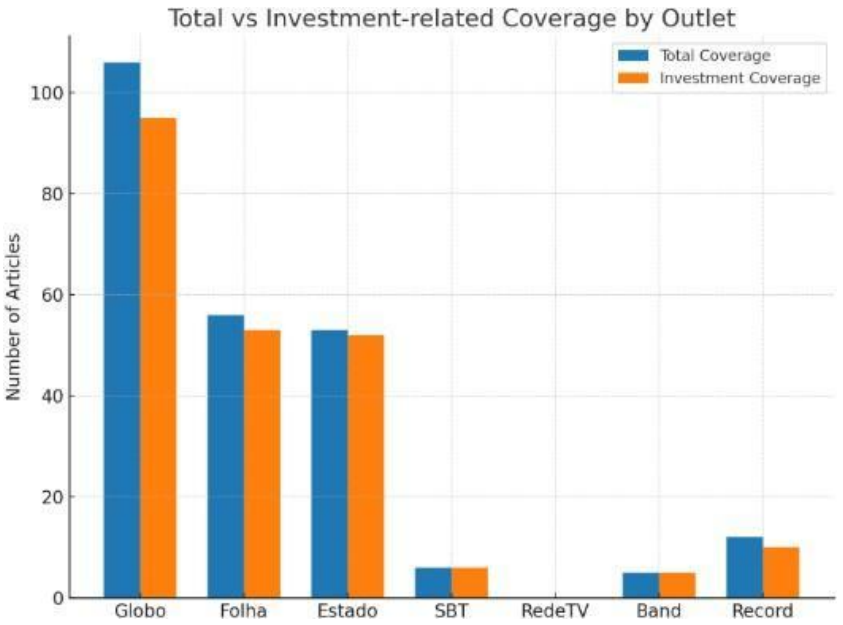
The results show that most reports (206 out of 238, or 86.5%) were positive or neutral. Only 28 reports (11.8%) adopted a cautionary tone, and a mere 4 reports (1.7%), all published in *Folha de São Paulo*, could be classified as genuinely balanced between pros and cons.



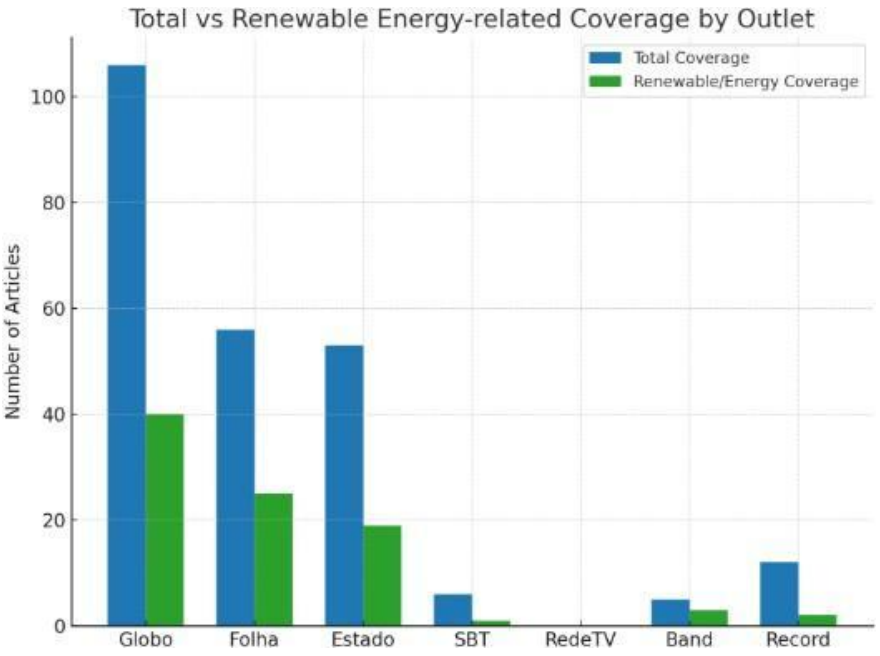
Disaggregating by outlet shows consistent patterns. At Globo, 91 of 106 reports (85.8%) were positive or neutral, 15 (14.2%) were cautionary, and none adopted a pros-and-cons framing. *Folha* was the only outlet to publish balanced reports, four in total (7.1% of its coverage). At *O Estado de São Paulo*, 48 of 53 reports (90.6%) were positive or neutral, while 5 (9.4%) raised environmental cautions. RecordTV mentioned environmental impacts in only three cases (25% of its coverage), whereas SBT and Band made no mention at all.

Framing and associations

A closer look at thematic associations shows that data centres were overwhelmingly tied to business and market success. Considering all the cases analysed, 221 of 238 reports (92.9%) linked the technology to investment opportunities, foreign capital inflows, or corporate expansion. Globo reinforced this angle, with 95 of its 106 reports (89.6%) portraying data centres in discussions involving investments, market and competitiveness.



By contrast, environmental sustainability was referenced in far fewer instances. Only 90 reports (37.8%) mentioned renewable or clean energy, or strategies to reconcile data centre development with environmental goals. Even in outlets that did so most often, like *Folha* (44.6% of its reports), this remained a minority framing.



Many reports also advanced the idea of Brazil's abundance of renewable energy resources, positioning the country as especially suited to host data centres facilities. This framing suggested that the deployment of data centres was not only compatible with environmental sustainability, but indeed beneficial, reinforcing a narrative of Brazil as a natural hub for green technological infrastructure. In doing so, it downplayed questions of resource competition and ecological strain, privileging a discourse that presents data centres as both an environmental and economic opportunity.

The tension between these discourses is striking. Reports that did highlight environmental risks or disputes with local populations, such as the case of Anacé community's struggles in Ceará, were often buried under a flood of coverage that emphasised new projects, capital inflows, and government incentives. Thus, cautionary voices appeared marginalised or camouflaged by the dominant narrative of technological promise and financial opportunity.

Considerations

The results confirm a systematic pattern in the Brazilian media: data centers are predominantly framed as mechanisms of progress and investment, with environmental

and social costs relegated to a secondary position. Although 86% of reports are positive or neutral, less than 12% address the topic with an informative tone about environmental impacts and provide insight into the risks these structures pose, and less than 2% make a genuine effort to weigh the pros and cons. This imbalance risks creating a distorted public debate, in which critical concerns are acknowledged but quickly overshadowed by a constant stream of celebratory or business-oriented narratives.

In practical terms, this means that when one article draws attention to the environmental impact on communities, the same outlet may simultaneously publish several other reports emphasizing investment, job creation, and the sector's "green" brand, diluting or camouflaging the critical perspective. This suggests that, while counterpoints exist, they are structurally marginalized in a discursive environment heavily biased toward portraying data centers as unproblematic symbols of development.

Furthermore, it is important to note that the repeated emphasis on renewable energy and financial investment acquires discursive power, transforming these themes into apparent solutions to the problems posed by data centers. Concerns such as high electricity consumption are often immediately juxtaposed with references to clean or renewable energy, creating the impression that environmental impacts are already mitigated. Through this repetition, the coverage reinforces an illusion of resolution: the suggestion that Brazil's renewable energy potential neutralizes any risks. Framing and repetition techniques can manufacture a sense of consensus or inevitability (LECHELER; KEER; SCHUCK; HÄNGGLI, 2015). In this case, the constant association of data centers with "green" narratives can displace environmental concerns, reframing them as resolved by the supposed sustainability of the national energy matrix.

Specific case studies

To verify how this message reaches—or fails to reach—the population living in and around these mega-constructions, analyses were conducted considering both a survey conducted through official government channels on environmental impact studies conducted in the regions and an empirical study with residents of two regions in particular: Eldorado do Sul (Rio Grande do Sul) and Pecém(Ceara). Before this, however, a brief case study was conducted on each of these regions and their relationship with data centers (considering their specificities and challenges).

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Case: Eldorado do Sul (RS)

The Scala AI City project in Eldorado do Sul, Rio Grande do Sul, Brazil, has already been announced as one of the most ambitious data center initiatives in South America (Governo do Rio Grande do Sul, 2024). The city, which was chosen due its availability of electrical power, space for expansion, strategic connections and the anticipated future connection to the Malbec submarine cable (Data Center Dynamics, 2024), is expected to receive large amounts of investments. The initial prediction consisted of an investment of US$500 million for a capacity of 54 MW, with a long-term vision for expansion to 4,750 MW—a total investment that could reach US$80 billion (Data Center Dynamics, 2024; Government of Rio Grande do Sul, 2024).

From an environmental perspective, the construction company, Scala Data Centers, claims it will operate with 100% renewable energy and achieve zero Water Use Efficiency (WUE) through advanced waterless liquid cooling systems (Governo do Rio Grande do Sul, 2024). These commitments, however, must be assessed within the socio-environmental realities of the region.

Eldorado do Sul is located in the Guaíba River Basin, an area severely affected by catastrophic flooding in May 2024. The floods displaced more than 600,000 people across Rio Grande do Sul (Defesa Civil, 2024), with approximately 100% of Eldorado do Sul's urban area submerged and 90% of its population directly impacted (Souza, Granchi, Otto, 2024).

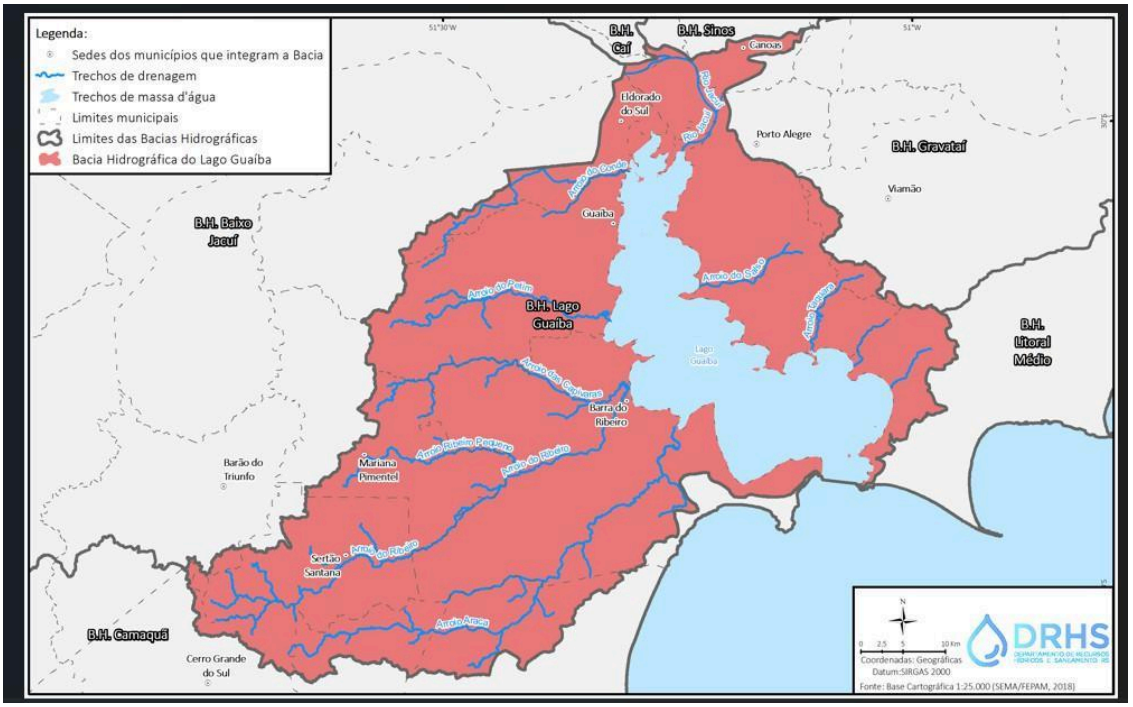

Image of the Guaiba hydrographic basin. Source: Government of Rio Grande do Sul

<https://sema.rs.gov.br/g080-bh-guaiba>

The neighboring cities of Guaíba and Porto Alegre also suffered record flooding, with water levels exceeding 5 meters at Lake Guaíba, the highest since 1941 (Paz, M. 2024). As a result, large portions of the metropolitan region faced weeks without access to drinking water (Perachi, 2024). This context of recurring hydrological vulnerability raises deep concerns about the wisdom of building a hyperscale data center complex in an area still recovering from the disaster and that requires clean water, even if not as much as other data centers.

The economic, environmental and social vulnerabilities are not mentioned, however, in the legislation created to deal with this mega installation project. The Municipal Law No. 5,949/2024 of Eldorado do Sul formalizes the creation of the Data Center Technology Park and expands the urban perimeter to accommodate the project (Eldorado do Sul, 2024). The law authorizes the municipality to grant incentives such as exemptions from local taxes and fees, partnerships for technical training, and even the conversion of permanent preservation areas into public parks linked to the development plan. Crucially, it also establishes that Scala Data Centers S/A is solely responsible for all environmental licensing and any damages to third parties, explicitly exempting the municipality from liability. This legal clause effectively shifts environmental responsibility from the public to the private sector, institutionalizing a framework of deregulation that weakens the state's role in monitoring and mitigating ecological damage.

This legislation highlights the priorities of authorities. While expanding the urban perimeter, a legal vacuum regarding specific environmental provisions in data center projects remains. Until September 2025, the resolutions of the National Environmental Council and the State Environmental Council of Rio Grande do Sul also do not provide standards for data center licensing in the country or in the state.

Furthermore, the fact that the data center is located in a region prone to flooding raises other issues, such as the overlapping of financial interests with the social interest of creating safe spaces for the population during periods of heavy rain, especially in a place historically affected and completely compromised by the floodings of 2024.

It is also worth noting that there is a clear interest from the government in making the project work, given that the Ministry of Mines and Energy granted the largest authorization for energy reserves ever granted to a data center company, guaranteeing a connection of 5 gigawatts (GW) of energy (Governo do Rio Grande do Sul, 2025).

Given the project's location in a flood-prone watershed, its enormous projected energy demand, and a local governance structure designed to prioritize private investment over ecological or social responsibility, the Scala AI City initiative exemplifies the contradictions of the "green AI" narrative. Claims of "zero water use" and "100% renewable energy" cannot be evaluated in isolation from the social and geographic contexts in which such infrastructure is deployed, lest the most marginalized communities continue to be the most affected.

Case: Pecém (CE)

Northeastern Brazil also has plans to build a large data infrastructure complex. In a project announced by the federal government as a market giant and a strong implementer of AI in its activities, TikTok (Skinner, H. Charalambous, P, 2025) plans to build a data center in the state of Ceará, at the port of Pecém (CNN Brasil, 2025).
This is a strategic location, given that Fortaleza currently houses 17 submarine fiber optic cables connecting Brazil to North America, Europe, and Africa. The project, still in the development phase, is among the most ambitious in Brazil, with a planned capacity of up to 900 MW—comparable to some of the largest data centers in the world (Ximenes, V. 2025).
The company behind the multi-million dollar project, which is listed as a TikTok partner for all intents and purposes, is Casa dos Ventos, which plans to invest R$50 billion in Ceará, the largest investment ever made in the region (Ximenes, V. 2025). This same company presented a report indicating an average power consumption of 210 MW for the project, which equates to a daily consumption of 5,040 MWh for 24-hour operation (Martins, L., Amorim, F., 2025). This usage corresponds to the residential electricity consumption of approximately 2.2 million Brazilians, based on the national average of 2.27 kWh per person per day. This means that, alone, it will consume more energy than 99.9% of Brazilian municipalities, and its annual demand of 1,84 TWh would exceed the total consumption of the states of Acre, Amapá, and Roraima combined (Martins, L., Amorim, F., 2025). This, however, would represent just 70% of total capacity; being projected to reach at its peak up to 300 MW, implying even greater energy consumption (Martins, L., Amorim, F., 2025).
The high demand did not go unnoticed by regulatory agencies, but despite an initial negative opinion from the National Electric System Operator, Casa dos Ventos managed to obtain a favorable opinion to operationalize the investment (ONS, 2025). The major investment to meet the expected amount of energy will consist of new wind and solar farms to supply all this demand. If insufficient, they will be replaced by a backup system

with 60 diesel-powered generators, which will operate in the event of a power outage, providing enough power to maintain operations for 24 hours (Martins, L., Amorim, F., 2025). Furthermore, the installation of these renewable energy bases is expected to affect surrounding cities, such as Caucaia, which is why it is sometimes identified as the data center hub (Martins, L., Amorim, F., 2025). The government, however, is consistent in stating that water consumption for such facilities will not be significant (Agencia Brasil, 2025c). Even so, concerns about energy and water consumption are already plaguing the local community, which has already mobilized to oppose the construction of this mega-project. A formal complaint has been filed with the Public Prosecutor's Office (MP-CE) and the Federal Public Prosecutor's Office (MPF). In it, the Anacé Indigenous community, which lives in the as-yet-undemarcated territory, as well as several civil society groups, called for the immediate suspension of the licensing of the TikTok data center project in Caucaia and the annulment of the preliminary license already issued by the Ceará State Environmental Superintendence (Martins, Lais, 2025 b). One of the alleged points is that altering the environment without prior consultation with the local Indigenous population would violate Article 169 of the ILO, which would be entitled to this right even without the demarcation of approved lands.

This is not the only legal issue being contested. The project's viability is, in fact, the result of a legal flexibilization. Part of the project, as noted, will be carried out in Caucaia. This second phase is expected to involve an investment of R$100 billion and is to be carried out within a Free Trade Zone (ZPE) (Faria, B. 2025). The truth is that until mid-2025 such an undertaking was not possible in this area, but Provisional Measure 1,307/2025 made this alternative viable (Brasil, 2025). It is clear that the case implies an impact on multiple municipalities in the coastal region of Ceará, close to its capital, and is already causing concern for some of the residents who are already the most historically marginalized.

Requests for information

Requests were submitted under the Access to Information Law to the municipalities of Fortaleza, Eldorado do Sul, and Guaíba—locations identified for potential data centre installations—as well as to the states of Ceará and Rio Grande do Sul, which are directly involved in negotiating these projects.

Each request sought clarification on the existence of environmental impact assessments or related documents that had been produced, presented, or reviewed in connection with the proposed facilities.

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Results of the requests

The responses revealed a consistent absence of environmental assessments at both municipal and state levels:

- **Municipalities (Fortaleza, Caucaia, São Gonçalo do Amarante, Eldorado do Sul, and Guaíba)**: Fortaleza, São Gonçalo do Amarante and Guaiba municipalities replied that they had not prepared or received environmental impact reports. Instead, they indicated that responsibility for such assessments lay with the respective state governments, given their role in leading negotiations with private actors. São Gonçalo do Amarant specifically said the agency responsible for environmental licensing and linked to the State Secretariat for the Environment and Infrastructure (SEMA), while Fortaleza stated that this should be addressed with the Ministry of Mines and Energy. This effectively transferred responsibility away from the municipalities, despite their constitutional mandate to regulate matters of local environmental concern. The remaining municipalities did not answer until the end of this research.
- **State of Rio Grande do Sul:** The state, through the Fundação Estadual de Proteção Ambiental Henrique Luis Roessler (FEPAM), the agency responsible for environmental licensing and linked to the State Secretariat for the Environment and Infrastructure (SEMA), stated that *"FEPAM has not, to date, received any request for environmental licensing regarding the data centre."*
- **State of Ceará**: Ceará initially argued that information on the negotiations was confidential. An appeal was subsequently filed, clarifying that the request did not pertain to the terms of negotiation but specifically to whether environmental impact studies had been conducted, and what their findings entailed. The state's subsequent response was that the Ceará State Secretariat of Environment and Climate Change (SEMA) is not responsible for issuing an Environmental
  Authorization for this project, as it is not located within a State Conservation Unit. Therefore, they do not have records of any proceedings or environmental analyses related to this case.
- **Federal Response**– Following Fortaleza's response, a formal inquiry was submitted to the aforementioned Ministry at the federal level. The reply received stated, in essence, that within the Department of Planning and Concessions for the Transmission and Distribution of Electric Energy and International

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under the National Secretariat for Energy Transition and Planning (SNTEP) of this Ministry, there are no records of administrative proceedings, discussions, or any form of negotiation related to the installation of a data centre by the company TikTok.

Responses to requests made under the access to information law

The access to information survey was conducted with a dual purpose. The first was to obtain reliable information from Brazilian authorities about the environmental studies being conducted for the implementation and construction of major infrastructure projects in their territory. The second was to allow reflection on who should be responsible for protecting the environment—a response that should be supported by the constitution, but which ultimately reveals a significant gap in accountability in this specific case. Indeed, Article 225 of the Federal Constitution enshrines the right of all individuals to an ecologically balanced environment, defined as a common good essential to a healthy quality of life. This provision imposes on both government and society the duty to defend and preserve the environment for present and future generations.

To guarantee this right, the Constitution mandates the adoption of legal instruments and public policies for the protection of biodiversity, the monitoring of activities affecting the environment, and the sanctioning of harmful practices. These regulations could be made by different actors. For instance, Article 24 establishes that the Union can establish general standards regarding the environment, while the States and Federal District can also issue supplementary norms, and municipalities legislate on matters of local concern. In practice, this means that responsibility for environmental care is distributed across all levels of government, each with distinct but interconnected roles.

Thus, the responsibility and the ability to legislate over environmental implications of high-impact infrastructure projects such as large-scale data centres should be assessed by multiple governmental spheres, but that's not what was reported on the answers given. The responses,in that sense, expose a troubling lack of clarity and accountability in the governance of environmentally significant infrastructure. Municipal authorities have distanced themselves from responsibility by attributing competence to state governments. States, meanwhile, either denied the existence of studies (Rio Grande do Sul) or invoked confidentiality (Ceará), raising concerns over transparency and compliance with constitutional obligations to safeguard the environment.

This absence of environmental impact assessments in the early stages of project negotiation raises critical questions about the robustness of decision-making processes

regarding large-scale data centre installations, and whether affected communities' rights to a healthy environment are being adequately safeguarded.

Community awareness

Knowing that government and media discourse do not prioritize dissemination of environmental risks from data centers, it was necessary to understand how this information is being perceived by people living near the areas where these mega-projects are being built. To this end, a report was created via Google Forms, whose questions were validated with community leaders from Eldorado do Sul and activists from the Ceará region.
This report was disseminated to the public through text messages sent via WhatsApp, as well as through videos created by activists and influencers from Rio Grande do Sul on Instagram channels.
The text message was distributed with an specific art for each region (Ceará e Rio Grande do Sul), and with the following message:
"Are you aware? 🤔

A very large infrastructure project is being built in your area, which could affect your life and the environment, as you know!
🏭🔍 *The so-called "data center" is being built, and to find out how you're dealing with this information—or not—I'm conducting a survey to see how much you know about it. For example, have you been notified about this construction? Do you know what a data center is? And have you been told anything about the impacts and consequences of this installation?*
📄 *To participate in the survey, simply complete the online form. Your response is crucial to understanding what kind of information is being shared! The more people who participate, the better we'll be able to understand what's being shared, how you're being notified, and how this project will benefit you and your community.*
📲*Participate!*

[https://docs.google.com/forms/d/e/1FAIpQLSeJpd0h7-5VFyAMMM4FtZZLpvzwN04inALwuY4U0JdqBqIwhA/viewform?usp=header]".

The videos were created and disseminated in partnership with "Eco Pelo Clima," a youth movement from the state of Rio Grande do Sul that seeks to root the climate agenda in Rio Grande do Sul society, represented by Bruno Thomazi Zanette and Frederico Dal

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Reckziegel, and "Kopa Coletiva Arquitetura Popular," a peripheral social impact business located in Restinga, a southern outskirts of Porto Alegre, RS, whose mission is to democratize access to architecture and urban planning, represented by Karol Rosa de Almeida urban planner and popular architect. Contacts with people from Eldorado do Sul were also facilitated by Marina Zwetsch, designer and communicator at the South American Network for Environmental Migrations (Resama). The art for the cards was created by Ana Carolina Moraes, Journalist and communicator at the South American Network for Environmental Migrations (Resama). The support of these organizations was crucial in disseminating the research in affected communities and bringing attention to the issue of data center construction in the region. This demonstrated the need to work with frontline workers and grassroots communities in the regions being studied.

The questionnaire was designed with three main objectives: (i) to obtain participants' consent and comply with legal formalities; (ii) to profile respondents by asking about their ethnicity, age group, gender, and area of residence, which allowed for the exclusion of those outside the study region from the final report; and (iii) to assess participants' knowledge of the relationship between data centers and environmental impacts in their regions. Questions were presented in both open-ended and closed-ended formats. This dual approach aimed not only to determine whether participants had access to certain information, but also to provide space for additional responses and personal insights.

The topics addressed in the questionnaire covered several dimensions: participants' prior relationship with the environment; their perception of environmental changes and safety in their region; their knowledge of data center installations, including what a data center is and how it operates; their perception of the environmental impacts generated by data centers and the potential impacts they anticipate; and whether they associate data centers with water shortages or other environmental issues.

Participants were also asked about perceived benefits of these projects, whether they had been officially consulted or participated in meetings regarding the installations, and if they knew whom to contact in case of problems. Additionally, the questionnaire explored what information companies or governments provided about these projects, how participants obtained this information, whether they trusted the available sources, and whether they felt they had sufficient access to information regarding construction and environmental impacts.

The primary responses collected in the Northeast region were from residents or workers who commute to the Caucaia region, where there is already a center of opposition to the

creation of data centers and public demonstrations in this regard. In Rio Grande do Sul, responses were considered from those living around the Guaiba river basin, given the environmental vulnerability versus the environmental safety of the data center.
Responses were accepted from Eldorado do Sul, Guaiba (which borders the installation site), Porto Alegre (given that the project will have a connection to the data center to be installed there), and Canoas (the region between these two cities).
The questionnaire received a total of 66 responses. Some, however, had to be disregarded because they were answered by people outside the defined impacted area. Nevertheless, their contact emails were recorded so they would receive a Portuguese version of the final report as well as an invitation to participate in a later online training session on data centers, the environment, and environmental displacement.
Among the responses considered, 40 were from Rio Grande do Sul and 20 from Ceará. The low response rate is due to both the lack of direct intervention, the short implementation time, and the fact that the survey's supporters promoted the survey more in the South than in the Northeast. In any case, the initial goal of the survey was to obtain up to 50 responses, considering the previous limitations, thus exceeding initial expectations.
The survey aimed to capture a wide range of perspectives by seeking respondents from diverse age, gender, and racial backgrounds. This approach was designed to ensure the results reflected a broad spectrum of voices.

Age distribution

In Rio Grande do Sul, the respondents included two people under 20, seven aged 21-30, thirteen aged 31-40, six aged 41-50, three aged 51-60, and nine over 60. The profile in Ceará was different, with seven respondents aged 21-30, three aged 31-40, six aged 41-50, two aged 51-60, and two over 60.

Gender profile

In terms of gender identity, the sample in Rio Grande do Sul comprised 27 cisgender women, 13 cisgender men, and one non-binary person. In Ceará, 12 identified as cis-women and eight as cisgender men.

Racial and ethnic self-identification

Regarding racial identity, the responses in Rio Grande do Sul were 30 white, four mixed-race, and seven black individuals. Ceará presented a more diverse spread, with six white, six mixed-race, five black, and two indigenous respondents.

The respondents' relationship with nature.

In Ceará, the vast majority reported a strong connection with the natural world, with 14 individuals frequently visiting green areas and one working in an environmental field. Only five respondents reported having no active engagement with the environment.
A similar trend was observed in Rio Grande do Sul, where 28 people frequently visit green areas, four work with the environment, and one lives near an environmental reserve. A minority of six reported no regular interaction with nature.
In total, out of the 60 respondents across both states, 11 reported having no active interaction with the environment, which is equivalent to 18% of the total, being the vast majority (82%) connected with green areas. .

Environmental perception

When asked, "Have you noticed environmental changes in your region in recent years?" The response was overwhelmingly affirmative.
In Ceará, 12 respondents reported noticing many changes, while five had observed a few. Only three stated they had not noticed any changes.
The perception of change was even more pronounced in Rio Grande do Sul, where 30 people reported many changes and nine noted a few. Only one individual preferred not to comment.
In total, 56 out of the 60 respondents across both states have observed environmental shifts in their regions. This represents 93% of all participants, indicating a near-universal consensus on the occurrence of environmental change.

Safety perception

The survey also investigated participants' feelings of safety from environmental phenomena such as floods, droughts, and landslides. The responses revealed a striking contrast between the two states.

In Ceará, perceptions were divided: five respondents considered their area safe, nine felt only partially safe, and five felt unsafe. One person declined to comment. In general, they reported that part of the city floods with heavy rains.
In Rio Grande do Sul, the sentiment was overwhelmingly skewed towards insecurity. A significant majority of 27 respondents stated they did not feel safe, while ten felt only partially safe. Only three considered their area safe.
Analysing the qualitative data, it became clear that these perceptions were heavily influenced by recent events. Responses from Rio Grande do Sul frequently referenced the devastating 2024 floods, which created a widespread feeling of vulnerability. Conversely, those who felt safe often attributed this to not having been directly affected by such disasters.
Overall, the data paints a picture of significant environmental concern. Of the 60 respondents, 32 (53%) stated they do not feel safe. When including those who feel only partially safe, this figure rises to 51 people, or 85%, who have clear reservations or concerns about the environmental threats in their regions.

Knowledge of the installations

Regarding awareness of data centre construction in their regions, the survey revealed a generally low level of public knowledge. In Ceará, out of 20 respondents, only 9 (45%) were aware of such projects. The remaining 11 were either unsure what a data centre is (6 people) or were unaware of any local construction (5 people).
Similarly, in Rio Grande do Sul, less than half of the respondents—18 out of 40 (45%)—reported knowing about the construction. A significant number were unfamiliar with the concept (12 people) or were simply unaware of any projects (10 people).
In total, of the 60 respondents across both states, less than half (27 people, or 45%) were clearly aware of data centres being built in their region.

Familiarity with the concept of a data centre.

In Ceará, knowledge was limited: only 7 respondents claimed a firm understanding of what a data centre is, while 5 had a general idea. A significant portion, 7 individuals, were unsure, and one had no knowledge.

In contrast, respondents in Rio Grande do Sul demonstrated greater awareness, with 20 stating they know what a data centre is and 14 having a general idea. Only 6 reported not knowing.
This data reveals a significant knowledge gap. When combined with the previous finding that less than half of respondents were aware of local construction, it indicates that a large portion of the surveyed population is uncertain about this type of investment and its implications in their region.

Perceptions of data centers' environmental impact

When asked whether data centers cause environmental impact, an overwhelming majority of respondents across both states believed that they do. In Ceará, 14 people answered "yes," compared to only 1 "no" and 5 who "didn't know." This sentiment was even stronger in Rio Grande do Sul, where 28 affirmed an environmental impact, versus 5 who denied it and 7 who were unsure.
Regarding the specific types of impacts, it is notable that energy consumption was rarely cited. Instead, respondents predominantly pointed to other concerns. Water consumption was the most frequently cited issue, mentioned by 22 respondents in total. Deforestation, for its turn, was the second greatest concern with 19 responses, followed by electronic waste production with 15. The fourth most cited environmental damage was the amount of CO2 emissions, which was identified by 12 individuals. A striking finding, however, was that only four respondents across the entire survey mentioned energy consumption.
This reveals a significant gap in public awareness, as the enormous energy demand of data centers, a primary source of their environmental footprint, appears to be poorly understood as a direct consequence for local communities. In contrast, the prominence of water consumption demonstrates that this particular argument has effectively entered the public discourse.

Perceptions of data centers and potential water shortages

The survey also explored specific concerns about data centers potentially causing water shortages in respondents' regions. The findings reveal significant apprehension, particularly in Rio Grande do Sul.
When asked if data centers could lead to water shortages, a majority of respondents in Rio Grande do Sul (21 out of 40) answered "yes," while 5 said "no," and 14 were unsure. In

Ceará, opinions were more divided but still leaned towards concern, with 10 people believing they could cause shortages, 6 disagreeing, and 4 uncertain.
The justifications provided by those who answered "no" reveal interesting regional perspectives. In water-abundant Rio Grande do Sul, several respondents justified their negative response by citing their region's plentiful water resources, indicating a lack of awareness that data centers require clean, potable water. Others mentioned their belief that closed-loop cooling systems would mitigate water consumption.
In Ceará, the rationale for negative responses differed, focusing more on corporate responsibility. Respondents suggested that companies would naturally be conscious of their water usage and therefore avoid excessive consumption, with several also referencing the reduced impact of closed cooling systems.
This highlights a common technical misunderstanding across both states regarding the water requirements of data centers, even as a significant portion of the population correctly identifies water scarcity as a potential risk.

Perceptions of data centers and environmental damage

The perception that data centers pose a threat to the natural environment is a prevailing sentiment among respondents. When asked if these facilities could affect nearby natural areas, the vast majority agreed. This was particularly pronounced in Rio Grande do Sul, where 34 out of 40 respondents answered "yes," with only 1 respondent saying "no" and 5 expressing uncertainty. In Ceará, the conviction was equally strong, with 16 respondents affirming the potential for harm and the remaining 4 unsure.
This overwhelming consensus, even amid some uncertainty about the specific mechanisms, reinforces the findings from earlier questions. Respondents consistently identified concrete impacts like water consumption and deforestation, indicating a deep-seated intuition that the industrial footprint of data centers inevitably encroaches upon and disrupts local ecosystems. The high level of concern for natural areas thus serves as an umbrella conclusion, encompassing the more specific worries about water, forests, and waste previously highlighted.

Perceived benefits of data center installation

When questioned about potential benefits from data center installations, a generally optimistic outlook emerged among respondents, though with notable regional variations. In Ceará, 11 respondents believed these facilities could bring benefits,

compared to 3 who disagreed and 6 who were uncertain. Rio Grande do Sul showed a more divided perspective, with 18 respondents anticipating benefits, 12 foreseeing none, and 10 expressing uncertainty.
Regarding the specific benefits envisioned, the survey revealed a clear pattern in public perception. Job creation emerged as the most frequently cited advantage, mentioned by 26 respondents across both states. This was followed by expectations of increased local development, cited by 21 respondents, and improved infrastructure, noted by 12 participants.
This collective perception of significant job creation and broad local development presents a noteworthy disconnect from industry reality. The overwhelming focus on employment opportunities suggests that respondents may be overestimating the long-term job market impact, as data centers typically require substantial manpower during construction but generate relatively few permanent operational positions. This gap between public expectation and operational reality highlights the need for clearer communication about the actual socioeconomic footprint of such facilities in host communities.

Public engagement perception

There is a significant transparency gap revealed by the question regarding public consultation. In Ceará, an overwhelming majority reported no official communication, with 17 respondents answering "no," 2 unsure, and only 1 confirming they had been consulted. Similarly, in Rio Grande do Sul, 31 out of 40 respondents stated they had not been informed. While 9 people in the southern state answered "yes," the nature or source of this information remained unclear from their responses, highlighting a broader issue of inconsistent and limited public engagement on the subject.

Perception of assistance and responsibility

The survey revealed a profound lack of clear channels for public communication regarding data centers. When asked if they knew who to contact with questions or problems related to these facilities, the vast majority of respondents demonstrated no such awareness.
In Ceará, this was particularly stark: 17 people explicitly said "no," while a further 3 admitted they had never considered the question. In Rio Grande do Sul, the situation was similarly opaque. Although 4 respondents claimed to know who to contact, the

specific entity remained unclear, a significant point given that no official contact or responsible focal point has been publicly established. The overwhelming majority in the southern state (26 people) stated they did not know, and 10 others had never thought about it.
This data underscores a critical transparency gap, confirming that communities feel disconnected from the decision-making process and lack defined avenues for accountability or information regarding data center projects.

Lack of official information

When asked if they had received any official information from the government or companies, a profuse majority reported they had not. In Ceará, 19 respondents categorically stated they received no information, with one person being uncertain. In Rio Grande do Sul, 33 out of 40 respondents said "no," while only 5 confirmed receiving information and 2 were unsure. In total, 55 out of the 60 respondents (92%) had not received clear or informative communication from official sources.

Predominant information channels

In the absence of formal outreach, respondents primarily rely on informal and social channels. Social media was the most common source of information, cited by 19 respondents. This was followed by word of mouth and conversations with friends or neighbors. Traditional media like TV and radio were mentioned by 9 people, while NGOs and social movements were a source for 8. Notably, only 2 respondents in Rio Grande do Sul cited the government as an information source.

A landscape of cautious trust

When questioned about which sources they trust the most, respondents showed a preference for established institutions. Newspapers were the most trusted source (13 respondents), followed by NGOs (7), and a tie between government, websites, and academic research (6 each). However, this stated trust does not fully align with their actual skepticism.
When asked directly if they trust the information they have received about data centers, a majority expressed reservations. In Ceará, 11 respondents trusted the information only "partially," while in Rio Grande do Sul, this figure rose to 22. Only 17 respondents across both states expressed full trust in their available information.

This disconnect highlights a critical challenge: the public is forming opinions based on informal sources they only partially trust, while the official entities responsible for the projects are largely absent from the conversation.

A prevailing sense of being uninformed

The survey reveals a widespread sentiment among respondents that they lack sufficient access to information about developments in their own regions. When asked directly if they felt well-informed, a clear majority expressed dissatisfaction. In Ceará, only one person felt they had adequate access, compared to 14 who stated they did not and 5 who said "somewhat." In Rio Grande do Sul, the situation was slightly better but still concerning, with 5 respondents feeling informed, 23 feeling uninformed, and 12 answering "somewhat." In total, 37 out of 60 respondents explicitly stated they do not have enough information about regional construction and concessions.

This perceived information deficit is directly reflected in their self-assessment regarding a specific and critical issue: the environmental impacts of data centers. When questioned on this topic, the results were even more stark. In Ceará, only one respondent felt
well-informed, against 18 who did not and one who was somewhat informed. In Rio Grande do Sul, just 5 felt knowledgeable, while 25 did not and 10 felt only partially informed.

Ultimately, a mere 6 respondents across both states feel they possess good knowledge about the environmental implications of these projects. The overwhelming majority (43 people) feel poorly informed, with a further 11 acknowledging only partial understanding. This means that an overwhelming 90% of the surveyed population lacks confidence in their knowledge about the environmental consequences of these major infrastructure projects.

Regarding spread information

The survey also explored exposure to the common misconception that data centers "don't pollute" or "don't cause environmental impact." The responses indicate that this narrative has reached a notable portion of the population.

In Ceará, 5 respondents confirmed having heard this claim, while in Rio Grande do Sul, the number was more than double, at 13 people. In total, 18 out of the 60 respondents (or 30% of those surveyed) have been exposed to this inaccurate information.

This number is extremely significant when analyzed through the prism of the 5 Ds. The narrative that data centers don't pollute functions primarily as a powerful form of "dismissal," as it seeks to completely invalidate the basis of environmental concerns by presenting the technology as inherently clean, thus ending the debate before it even begins. This narrative, amplified by a media discourse that predominantly frames data centers as vectors of "green" digital progress, thus diverts public attention from their tangible demands for resources.
This figure is notably high, underscoring the challenge of combating disinformation and highlighting the need for clear public communication about the tangible environmental footprint of digital infrastructure.

Self-assessed accuracy of information on data centers

When respondents were asked to evaluate the accuracy of the information they possess about data centers, their self-assessment revealed significant uncertainty and a fragmented understanding across both states. In Ceará, the overwhelming sentiment was one of a lack of information, with 9 respondents stating they could not provide an assessment.
Of those who did offer an opinion, the views were mixed and leaned towards imprecision: 4 described their information as "very imprecise" and 3 as "reasonably imprecise." Only 1 person considered their knowledge "very accurate," with another 1 finding it "reasonably accurate," and 2 positioned in the middle.
In Rio Grande do Sul, the responses were more distributed but still highlighted a considerable degree of doubt. While 11 respondents felt their information was "reasonably accurate," a combined 12 others found it "very imprecise" (7) or "reasonably imprecise" (5). A significant portion, 9 people, remained neutral ("neither accurate nor imprecise"), and 6 had no information to evaluate.
This distribution underscores a critical challenge: there is no public consensus on the reliability of available information. A substantial number of people feel poorly informed or are unable to judge the quality of the information they have, pointing to a landscape where definitive, trusted information is scarce.This collective doubt is a direct consequence of the disinformation ecosystem, as narratives of overtly positive "green" promises and community-shared concerns about water and deforestation create a cacophony that ultimately serves to dismay the public. Faced with this information asymmetry and the vacuum of transparent communication, individuals feel cynical and

powerless, unable to discern truth from misleading claims. This state of confusion and distrust effectively disempowers citizens, discouraging scrutiny and meaningful public engagement.

Public expectations of government and corporate responsibility

The survey results reveal a clear and strong public mandate for accountability and transparency from both governments and companies regarding data center projects. When asked about the role these entities should play, respondents' expectations were overwhelmingly centered on public engagement and environmental oversight.
The data shows that an overwhelming majority of respondents believe that consulting the population is a fundamental requirement, with 46 people (76%) across both states emphasizing this need. Furthermore, an even larger consensus exists around the duty to monitor environmental impacts, cited by 53 respondents (88%), making it the most widely endorsed responsibility.
The obligation to inform the population with transparency was also a dominant theme, highlighted by 49 people (82%). In contrast, the role of encouraging development was a secondary priority, mentioned by only 21 respondents (35%). A striking finding is the near absence of emphasis on reinforcing existing safeguards. Out of 60 respondents, only a single person mentioned the need for governments and companies to strengthen environmental protections.
This suggests that public discourse is currently focused on the processes of communication and impact assessment rather than on the proactive fortification of legal and regulatory frameworks. This gap indicates that while communities are demanding a voice and oversight, the conversation about preemptive, stronger environmental defense is not yet a prominent part of the public agenda.

Discussion

The results of this research reveal a worrying scenario regarding the implementation of data centers in Brazil, marked by a profound dissonance between official rhetoric and socio-environmental reality. The literature review makes it unequivocally clear that these infrastructures, regardless of whether they operate with renewable or non-renewable energy, carry a heavy environmental impact. Considering the extensive use of space, the extraction of raw materials for their construction, the

production of waste, and the high consumption of electricity and water required for their operation, the impacts are significant and widespread.

However, this evidence is systematically overshadowed by the dominant media discourse, which operates mostly in a neutral or overtly positive tone, associating data centers with progress, investment, and job creation, while marginalizing reports on their concrete impacts, therefore operating by systematically distorting the narrative, distracting from core issues, and dismissing community concerns, which in turn fosters a sense of dismay and division. This is reflected in the survey, where the most trusted information sources were newspapers and NGOs, yet the primary channels respondents actually used were informal, such as social media and word of mouth, which they only partially trust.

Of all the news stories analyzed on Brazil's main news channels, only two mention construction projects in the southern region, in their headlines and in their headlines, with only one citing the pros and cons of these projects for the environment. The discrepancy is even more pronounced in Ceará, where of six news stories discussing data centers, only one cites the pros and cons. None of the news stories announcing construction projects in their headlines merely offer a perspective of caution regarding environmental impacts. This narrative asymmetry is not accidental, functioning to distract public attention from most critical issues such as the energy demand and building a sense of inevitability around these projects and legitimizes them as inherently beneficial, thus isolating community resistance and masking socio-ecological risks under the guise of sustainability in the Brazilian energy matrix.

Institutional opacity, evidenced by the responses obtained through the Access to Information Law (LAI), is a central pillar sustaining this situation. The constant shifting of responsibility between municipal, state, and federal authorities regarding who is responsible for conducting Environmental Impact Studies (EIAs) creates an accountability vacuum, dismissing the public right to participate. This opacity is directly experienced by the public, which is perceived by the fact that 92% of respondents reported receiving no official information, and 55 out of 60 had not been consulted about the projects.

In this vacuum, large-scale projects move forward without any governing body assuming the role of environmental oversight. This regulatory vacuum is not accidental, but rather a deliberate condition that allows for the acceleration of investments to the detriment of environmental oversight and the constitutional right to information. The absence of Environmental Impact Assessments (EIAs) and formal licensing procedures, as explicitly acknowledged by the state of Rio Grande do Sul, demonstrates that "attraction strategies"

are being prioritized over environmental protection, relegating the ecological principles enshrined in the Constitution to a secondary role.

This ecosystem of disinformation and opacity directly shapes public perception, as revealed by the opinion poll. The survey reveals a population that is deeply concerned about the environment, in which 93% have noticed environmental changes and 85% feel unsafe or partially unsafe in their houses, but are still systematically deprived of accurate information. A striking 90% feel poorly or only partially informed about the environmental impacts of data centers, and there is a significant gap in understanding their primary impact, since energy consumption was cited by only four respondents. This finding starkly illustrates the success of the distort and distract tactics, where the public's justifiable concerns are funnelled towards manageable topics like water use, while the foundational issue of energy intensity remains largely absent from public discourse.

It is important to acknowledge, however, a methodological limitation of this research: the online data collection process resulted in a small and geographically limited sample, which restricted broader community representation. Nevertheless, the results remain revealing. The widespread lack of information among residents of the affected areas, most of whom are unaware of what data centers are, their environmental impacts, or how to access official channels of participation, reflects the logical result of biased media coverage and state inaction. This is compounded by a profound lack of clear communication channels, with the vast majority of respondents having no idea who to contact with questions or problems, thus cultivating dismay, disincouraging collective action by a sense of uncertainty and cynicism. The combination of celebratory narratives and opaque decision-making processes produces an uninformed public, consequently incapable of meaningfully engaging in debates about the future of their own territory. For future studies, a broader, field-based methodology involving in-person interviews and community engagement in directly affected areas, such as Eldorado do Sul and Ceará, would provide a more accurate and detailed understanding of local perceptions and knowledge gaps.

An analysis of case studies in Ceará and Rio Grande do Sul illustrates the contradictions inherent in this development model. The promise of "zero water use" in Cidade Scala AI, in Eldorado do Sul, sounds particularly cynical in a region still recovering from catastrophic floods and widespread interruptions in access to drinking water. This is especially relevant given that water consumption is the public's foremost environmental concern regarding data centers, cited by 22 respondents, yet technical misunderstandings about water

requirements are common. Similarly, the Pecém project, which will consume an amount of electricity comparable to that of entire states (which is not yet realised by the population), exposes the paradox of the so-called "green and digital economy," which, in practice, is resource-intensive and environmentally burdensome. The claim that renewable energy neutralizes these impacts functions as a form of greenwashing, obscuring the material and territorial costs of predominantly "clean" energy generation. Wind and solar infrastructure themselves often reproduce patterns of extractivism, displacing communities and intensifying environmental degradation in so-called "green sacrifice zones." This dynamic effectively divides society, pitting a narrative of inevitable progress and development against the rights and livelihoods of local and traditional communities, who are framed as obstacles to a greener future.

Taken together, the results suggest that the development of digital infrastructure in Brazil is sustained by a triple mechanism: a public narrative that displaces or sanitizes environmental damage; a governance architecture that institutionalizes opacity and evades responsibility; and a consequent alienation of directly affected communities. The survey data powerfully confirms this alienation: the public's overwhelming demands are for consultation (76%), impact monitoring (88%), and transparent information (82%), yet these needs are almost entirely unmet.The interplay of the 5 Ds has thus created a governance vacuum where corporate and state interests can advance with minimal oversight, leaving the public disoriented, disinformed, and disempowered.

The burden of the cloud, therefore, is not distributed equally. It falls disproportionately on already vulnerable territories and populations, neglected by the state, rendered invisible by the media, and burdened with the socio-ecological costs of digital progress from which they do not benefit.

Conclusion and recommendations

In conclusion, this research demonstrates that the data center expansion model in Brazil is far from being the emblem of officially promoted sustainable modernity. On the contrary, it is characterized by structural opacity, where media disinformation and a lack of state transparency converge to create fertile ground for environmental injustice. This is starkly evidenced by the survey findings: 92% of respondents in affected areas received no official information, 76% were not consulted, and a vast majority feel uninformed and lack clear channels for communication. The dominant public narrative of progress and

economic growth functions as an organized strategy of disinformation that obscures tangible ecological damage and systematically excludes community voices from decision-making processes. This exclusion occurs despite communities demonstrating a clear understanding of environmental risks and a strong desire for engagement, with 88% of respondents asserting that monitoring environmental impacts is a primary duty of authorities.

The results highlight the urgent need for a complete reassessment of this development policy. The significant gap between public perception and operational reality—where expectations of job creation outweigh the understanding of core impacts like massive energy consumption—reveals a failure of public communication and accountability. The transition to a digital economy cannot reproduce the historical logic of colonial extractivism, externalizing costs onto the most vulnerable populations and sacrificing territories in the name of profit. It is imperative that Brazil adopt a digital governance model based on radical transparency, rigorous and mandatory environmental licensing, and effective social participation from the early stages of project planning. This must include proactive, accessible public consultations and the establishment of clear official contact points, directly addressing the profound communication gap identified in the survey. Only through these measures can digital infrastructure projects align with the country's constitutional commitments to environmental protection and democratic accountability.

Ultimately, this study reaffirms that cloud sustainability is, above all, a matter of socio-environmental justice. The path forward requires a decisive break with the current cycle of disinformation, which has allowed 30% of the local population to encounter the false claim that data centers "don't pollute". Brazil's digital future must be built on open dialogue, accessible information, and unwavering respect for the environment and human rights, ensuring that technological development becomes synonymous with democracy, equity, and genuine ecological responsibility.

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References

- AGÊNCIA BRASIL. Governo lança regime especial para atrair data centers. Agência Brasil. 2025 a Disponível em https://agenciabrasil.ebc.com.br/economia/noticia/2025-09/governo-lanca-regi me-especial-para-atrair-datacenters.
- AGÊNCIA BRASIL. Governo do Ceará promete água de reúso para instalar data center. Agência Brasil. 2025 c. DIsponível em https://agenciabrasil.ebc.com.br/geral/noticia/2025-09/governo-do-ceara-prom ete-agua-de-reuso-para-instalar-data-center
- BRASIL. PROVISIONAL MEASURE No. 1,307, OF JULY 18, 2025. Available at https://www.planalto.gov.br/ccivil_03/_ato2023-2026/2025/Mpv/mpv1307.htm
- BALLARI, Daniela; SIABATO, Willington; CLARAMUNT, Christophe; MATA, Miguel; ZAGAL, Roberto; FRANCO, Rodolfo. On the development of open geographical data infrastructures in Latin America: progress and challenges. **Journal Of Spatial Information Science**, [S.L.], n. 30, p. 3-23, 5 jun. 2025. Journal of Spatial Information Science. http://dx.doi.org/10.5311/josis.2025.30.364.
- CÂMARA DOS DEPUTADOS. Medida provisória busca impulsionar instalação de datacenters no Brasil Fonte: Agência Câmara de Notícias. 2025 Disponível https://www.camara.leg.br/noticias/1201670-medida-provisoria-busca-impulsion ar-instalacao-de-datacenters-no-brasil/#:~:text=A%20Medida%20Provis%C3%B3r i a%20%28MP%29%201318
- CAAD. DENY, DECEIVE, DELAY DOCUMENTING AND RESPONDING TO CLIMATE DISINFORMATION AT COP26 AND BEYOND. CAAD 2022. Available at https://www.isdglobal.org/wp-content/uploads/2022/06/Summative-Report-COP 26.pdf

- Congresso Nacional. Medida Provisória nº 1318, de 2025. Congresso Nacional 2025 Disponível em https://www.congressonacional.leg.br/materias/medidas-provisorias/-/mpv/170521pito
- CNN Brasil. Após reunião com TikTok, Lula fala em instalação de data center no Ceará. CNN Brasil. 2025. Disponível em https://www.cnnbrasil.com.br/economia/negocios/apos-reuniao-com-tiktok-lula-fala-em-instalacao-de-data-center-no-ceara/
- COLUMBIA LAW SCHOOL. Community Benefits Agreements Database. Disponível em: https://climate.law.columbia.edu/content/community-benefits-agreements-data base. Acesso em: 07 out. 2025.
- DAMASCENO, B. Data Center da Casa dos Ventos em Caucaia deve gerar 15 mil empregos na 1ª fase; veja projeto .Diario do Nordeste. Disponível em https://diariodonordeste.verdesmares.com.br/negocios/data-center-da-casa-dos-ventos-em-caucaia-deve-gerar-15-mil-empregos-na-1-fase-veja-projeto-1.36 64363
- DATA CENTRE DYNAMICS. 2024. **Cidade de data centers é anunciada no RS para responder a demanda de IA**. Available at: https://www.datacenterdynamics.com/br/not%C3%ADcias/cidade-de-data-centers-e-anunciada-no-rs-para-responder-a-demanda-de-ia/#:~:text=Canais-,%E2%80%9CCidade%20de%20Data%20Centers%E2%80%9D%20%C3%A9%20anunciada%20no%20RS%20para,responder%20%C3%A0%20demanda%20de%20IA&text=O% 20governo%20do%20Estado%20do,500%20milh%C3%B5es)%20na%20fase%201.

[Accessed 7 October 2025].

- DATA CENTRE MAGAZINE. Brazilian data centre investment projections. 2025. Disponível em: https://www.datacentremagazine.com. Acesso em: 6 out. 2025.

- DEFESA CIVIL atualiza balanço das enchentes no RS – 20/8. rs.gov.br, 20 ago. 2024. Disponível em: https://www.defesacivil.rs.gov.br/defesa-civil-atualiza-balanco-das-enchentes-n o-rs-10-7- 66b67813ba21f-66c4eed627af9. Acesso em: 30 ago. 2024.
- DELFANTI, Alessandro; FREY, Bronwyn. Humanly Extended Automation or the Future of Work Seen through Amazon Patents. **Science, Technology, & Human Values**, [S.L.], v. 46, n. 3, p. 655-682, 29 jul. 2020. SAGE Publications. http://dx.doi.org/10.1177/0162243920943665.
- Doroshenko, L., & Lukito, J. (2021). Trollfare: Russia's disinformation campaign during military conflict in Ukraine. *International Journal of Communication*, *15*(0). https://ijoc.org/index.php/ijoc/article/view/16895
- Eldorado do Sul. LEI MUNICIPAL Nº 5.949, DE 06 DE DEZEMBRO DE 2024. Disponível em https://leismunicipais.com.br/a/rs/e/eldorado-do-sul/lei-ordinaria/2024/595/594 9/lei-ordinaria-n-5949-2024-dispoe-sobre-a-ampliacao-do-perimetro-urbano-cria-novo-polo-tecnologico-de-data-centers-para-a-implantacao-de-data-centers-e-da-outras-providencias
- FARHIG, L. Effects of habitat fragmentation on biodiversity. Annual Review of Ecology and Systematics, v. 34, p. 487–515, 2003.
- FARIA. B. Construção de data center da Casa dos Ventos terá segunda fase de R$ 100 bilhões. Data Center Dynamics. 2025. Disponível emhttps://www.datacenterdynamics.com/br/notícias/construção-de-data-cente r-da-casa-dos-ventos-terá-segunda-fase-de-r-100-bilhões/
- FREITAG, Charlotte; BERNERS-LEE, Mike; WIDDICKS, Kelly; KNOWLES, Bran; BLAIR, Gordon S.; FRIDAY, Adrian. The real climate and transformative impact of ICT: a critique of estimates, trends, and regulations. **Patterns**, [S.L.], v. 2, n. 9, p. 100340, set. 2021. Elsevier BV. http://dx.doi.org/10.1016/j.patter.2021.100340.

- Governo do Rio Grande do SUL.Com investimento de R$ 3 bilhões, Estado e Scala Data Centers assinam acordo para maior projeto de infraestrutura digital do RS. 2024. Disponivel em https://www.estado.rs.gov.br/com-investimento-inicial-de-r-3-bilhoes-governo-do-rs-e-scala-data-centers-assinam-acordo-para-o-maior-projeto-de-infraest rutu
- Giongo, C. R., Mendes, J. M. R., & Santos, F. K. (2015). Desenvolvimento, saúde e meio ambiente: contradições na construção de hidrelétricas. Serviço Social & Sociedade, 123, 501-522. https://doi.org/10.1590/0101-6628.034.
- INVESTNEWS. Brazil REDATAinitiative for data centres. 2025. Disponível em: https://www.investnews.com. Acesso em: 6 out. 2025
- LECHELER, Sophie; KEER, Mario; SCHUCK, Andreas R.T.; HÄNGGLI, Regula. The Effects of Repetitive News Framing on Political Opinions over Time. **Communication Monographs**, [S.L.], v. 82, n. 3, p. 339-358, 21 jan. 2015. Informa UK Limited. http://dx.doi.org/10.1080/03637751.2014.994646.
- Martins, L. A boiada da IA Governo escanteia Ministério do Meio Ambiente e ignora riscos em política nacional de data centers.The Intercept Brasil. 2025a. Disponivel em https://www.intercept.com.br/2025/04/28/governo-escanteia-ministerio-do-meio-ambiente-e-ignora-riscos-em-politica-nacional-de-data-centers/
- Martins, L. 'ÁGUA PARA O POVO, NÃO PARA DATA CENTERS' Moradores se unem para barrar data center do TikTok no Ceará. 2025 b. Disponivel em https://www.intercept.com.br/2025/09/17/moradores-se-mobilizam-contra-data-center-tiktok-ceara/
- Martins, L., Amorim, F. TRAN$AÇÃO ENERGÉTICA EXCLUSIVO: Data center do TikTok gastará energia equivalente ao consumo de 2,2 milhões de brasileiros, revela estudo interno. The Intercept Brasil. 2025. Disponivel em

https://www.intercept.com.br/2025/07/03/data-center-tiktok-energia-estudo-interno/

- Martins, Rafael. Caatinga desmatada para instalação de painéis solares mobiliza comunidade na Bahia. MogoBay. 2025 DIsponível em https://brasil.mongabay.com/2025/02/caatinga-desmatada-para-instalacao-de -paineis-solares-mobiliza-comunidade-na-bahia/
- Mauzi, G. Garcia, G., Castro, A.F., Laboissière, M. Veja íntegra do discurso de Lula na Assembleia Geral da ONU. G1, 2025 Disponível em https://g1.globo.com/politica/noticia/2025/09/23/veja-integra-do-discurso-de-lul a-na-assembleia-geral-da-onu.ghtml
- MEIRELES, Antonio Jeovah de Andrade. Danos socioambientais originados pelas usinas eólicas nos campos de dunas do Nordeste brasileiro e critérios para definição de alternativas locacionais. **Confins**, Brasil, v. 11, 2011. OpenEdition. http://dx.doi.org/10.4000/confins.6970.
- Ministério do Desenvolvimento, Indústria, Comércio e Serviços.Estratégia para Implementação de Política Pública para Atração de Data Centers. Gov.Br 2023https://www.gov.br/mdic/pt-br/assuntos/sdic/comercio-e-servicos/comerci o/estudo_completo_datacenters_jun2023.pdf/view
- Ministério de Minas e Energia autoriza reserva energética para cidade de data centers no Rio Grande do Sul. 2025. Governo do RIo Grande do Sul. Disponível em https://estado.rs.gov.br/ministerio-de-minas-e-energia-autoriza-reserva-energe tica-para-cidade-de-data-centers-no-rio-grande-do-sul
- NATIONAL LEAGUE OF CITIES. Data Centers and Local Environmental Considerations. 2025. Disponível em: https://www.nlc.org/article/2025/05/23/data-centers-and-local-environmental-c

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onsiderations/. Acesso em: 07 out. 2025.

- Neves. E. Brasil se lança na corrida pela produção do lítio, o mineral do futuro Leia mais em: https://veja.abril.com.br/agenda-verde/brasil-se-lanca-na-corrida-pela-produc ao-do-litio-o-mineral-do-futuro/. Veja. 2023, Disponível em https://veja.abril.com.br/agenda-verde/brasil-se-lanca-na-corrida-pela-produc ao-do-litio-o-mineral-do-futuro/
- ONS. ONS emite parecer favorável para a conexão de datacenters no Nordeste. ONS 2025. Disponível emhttps://www.ons.org.br/paginas/noticias/details.aspx?i=11485
- Paz, M. Enchente do Guaíba passa a cheia histórica de 1941; fotos mostram comparação . G1. 2024. Disponível em https://g1.globo.com/rs/rio-grande-do-sul/noticia/2024/05/03/enchente-do-guai ba-passa-a-cheia-historica-de-1941-fotos-mostram-comparacao.ghtml
- PERACHI, G. Água, alimentos, combustíveis, energia, transporte: saiba a situação do abastecimento após as cheias no RS. G1.2024. Disponível em https://g1.globo.com/rs/rio-grande-do-sul/noticia/2024/05/04/saiba-o-que-e-ve rdade-ou-mentira-sobre-a-enchente-no-rs.ghtml
- PENGFEI, L. Yang, J., Islam, M.A., Ren, S. Making AI Less "Thirsty": Uncovering and Addressing the Secret Water Footprint of AI Models. Communications of the ACM. 2025. https://doi.org/10.48550/arXiv.2304.03271
- Prisco. L, Metrópoles é o site de notícias mais acessado do Brasil. METROPOLES. 2025.Disponível em https://www.metropoles.com/brasil/imprensa/metropoles-e-o-site-de-noticias-mais-acessado-do-brasil
- ROBERTS, Jennafer Shae; MONTOYA, Laura N.. In Consideration of Indigenous Data Sovereignty: data mining as a colonial practice. **Lecture Notes In Networks And**

Systems, [S.L.], p. 180-196, 2023. Springer Nature Switzerland. http://dx.doi.org/10.1007/978-3-031-47451-4_13.

- Roquetti, D.R., Moretto, E., Pulice, S., & Paiva, M. (2017). Deslocamento forçado por barragem e resiliência socioecológica: a hidrelétrica de Barra Grande no Sul do Brasil. Ambiente & Sociedade, 20(3), 115-134. https://doi.org/10.1590/1809-4422ASOC153R2V2032017.
- Skinner, H. Charalambous, P. Gigante de tecnologia chinesa revela discretamente modelo avançado de IA em meio à batalha pelo TikTok. ABC News. 2024.
  Disponível em https://abcnews.go.com/US/chinese-tech-giant-quietly-unveils-advanced-ai-model/story?id=118572557
- Souza, F., Granchi,G., Otto.F., Sem hospital, escola ou quartel: a cidade que ficou completamente sob a água nas enchentes no Sul. G1 2024 Disponível em https://g1.globo.com/rs/rio-grande-do-sul/noticia/2024/05/13/sem-hospital-escola-ou-quartel-a-cidade-que-ficou-completamente-sob-a-agua-nas-enchentes-no-sul.ghtml
- STACCIARINI, A.; GONÇALVES, L. Data Centers, Minerais Críticos, Energia e Geopolítica: as bases da Inteligência Artificial. Energy & Environment, 2025. DOI: 10.14393/SN-v37-2025-77215
- SOVACOOL, B. K. Who are the victims of low-carbon transitions? Towards a political ecology of climate change mitigation. Energy Research & Social Science, v. 73, 2021.
- THE INTERCEPT BRASIL. Environmental risks of Brazilian data centres. 2025. Disponível em: https://theintercept.com/brasil. Acesso em: 6 out. 2025.
- THE WALL STREET JOURNAL. 2025. **The AI Data-Center Boom Is a Job-Creation Bust**

Available at: https://www.wsj.com/tech/ai-data-center-job-creation-48038b67

- TOZZI, C. . 2023. **How Many Jobs Do Data Centers Create? It Depends**. DATA CENTER KNOWLEDGEAvailable

at: https://www.datacenterknowledge.com/operations-and-management/how-many-jobs-do-data-centers-create-it-depends [Accessed 7 October 2025].

- UFC. Renewable energy intermittency and data centre stability. 2023. Disponível em: https://www.ufc.br. Acesso em: 6 out. 2025.
- VENDITTI, B. Why Copper Is Critical for Data Centers. 2023. DIsponível em <https://elements.visualcapitalist.com/why-copper-is-critical-for-data-centers/>
- VERAS MOTA, C. Quanta água o ChatGPT 'bebe' para responder sua pergunta? Data centers se multiplicam no Brasil e cientistas tentam estimar impacto. BBC. 2025.Disponível em: https://www.bbc.com/portuguese/articles/cy4dvlyg5j3oAcesso em: 6 out. 2025.
- Ximenes, V. O que se sabe sobre o mega data center de R$ 50 bilhões no Ceará. Diário do Nordeste. 2025. Disponível em https://diariodonordeste.verdesmares.com.br/opiniao/colunistas/victor-ximenes/o-que-se-sabe-sobre-o-mega-data-center-de-r-50-bilhoes-no-ceara-1.3656962
- Yahya, H. “Estadão” e “Folha” puxam alta na circulação de jornais impressos." PODER 360. 2025. Disponível em https://www.poder360.com.br/poder-midia/estadao-e-folha-puxam-alta-na-circulacao-de-jornais-impressos/
- ZOGRAFOS, C.; ROBBINS, P. Green sacrifice zones, or why a green new deal cannot ignore the cost shifts of just transitions. One Earth, v. 3, n. 5, p. 543-546, 2020.

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Appendices

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TABLE OF CONTENTS

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LIST OF TABLES

LIST OF TABLES

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Abstract

Climate disinformation is not an incidental byproduct of the digital age but the latest expression of colonial logics of mediated authority. This study argues that the mechanics through which climate denial and distortion circulate across the Global South cannot be understood apart from the infrastructures of British indirect rule, which historically governed 'through' intermediaries rather than 'over' subjects. Drawing on the Model of Indirect Epistemic Domination, the research demonstrates how recruitment, localization, deflection, normalization, and exploitation, once deployed to entrench imperial power, are today reactivated in digital and spiritual ecosystems, where religious, cultural, and viral social influencers legitimize climate falsehoods as indigenous truths. The study analyzes 200 purposively sampled disinformation posts from Facebook, X, and YouTube across eleven African states (January–June 2025) alongside structural indices of religiosity, trust in science, education, and media access. Multi-scalar analysis reveals that religiosity strongly amplifies susceptibility ($r \approx 0.83$), while media access functions as a double-edged vector, broadening reach but intensifying exposure. Regression modeling confirms that susceptibility is not merely informational but structurally conditioned, with colonial residues shaping epistemic ecologies. By revealing the genealogical continuity between colonial governance and climate disinformation, the study reframes the crisis as both epistemological and environmental, calling for climate communication strategies that confront inherited structures of authority, epistemic power, and belief.

Keywords

Climate Disinformation, Colonial Logics, Epistemic Model, Postcolonial Africa, Knowledge Systems, Global South

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Introduction

The struggle against climate change is not only ecological and technological but also epistemological. According to Cornell et al (2013), the ability of societies to recognize environmental risks, accept scientific consensus, and mobilize toward collective solutions depends on the integrity of the knowledge systems through which information circulates. Yet, in much of the Global South, and particularly across African states formerly shaped by British indirect rule, this epistemic terrain has been destabilized by a resurgence of climate disinformation. Such disinformation is not simply a contemporary digital nuisance; it is a sophisticated communicative practice that exploits historically sedimented structures of authority, belief, and legitimacy. To understand its potency, one must situate it within a deeper genealogy that links present-day vulnerabilities to colonial architectures of mediated power.

Essien (2025) argues that climate disinformation, unlike more episodic forms of rumor or misinformation, achieves durability by embedding itself in existing cultural and institutional logics. Narratives that dismiss global warming as a "Western scam," reframe droughts and floods as "divine punishment," or portray renewable energy transitions as plots against national sovereignty, do not resonate in a vacuum but have been documented in African climate discourse (Nhamo, 2021; Osei-Tutu, 2023). They derive credibility through the voices that deliver them: religious leaders, traditional chiefs, community elders, and increasingly, social media influencers, who function as cultural brokers of authority (Arora & McGuire, 2022). These actors occupy the same intermediary space once cultivated by colonial authorities, who relied on local brokers to translate, naturalize, and enforce imperial agendas. Thus, the endurance of climate disinformation across Africa cannot be divorced from the infrastructures of authority and knowledge engineered under colonial indirect rule.

British indirect rule, as theorized by Lugard (1922) and subsequently critiqued by Mamdani (1996), functioned more as an epistemic project than as a practical delegation of power. By ruling "through" rather than "over" indigenous institutions, colonial regimes manufactured authority by co-opting chiefs, clerics, and customary leaders into governance structures. This created a layered system of legitimacy in which external power was laundered through proximate, culturally trusted figures (Comaroff & Comaroff, 1991). The legacy of this system persists, not as a static tradition, but as an active logic of mediated governance: one in which authority is distributed, knowledge is filtered through intermediaries, and legitimacy is secured by resonance rather than direct coercion

(Mbembe, 2001). When contemporary climate denialists or interest groups embed their messages in the rhetoric of local pastors, viral social media threads, or community broadcasters, they are activating precisely these inherited modalities of indirect epistemic domination.

With this, the study interrogates the mechanics of climate disinformation in selected African countries formerly colonized under British indirect rule, moving beyond descriptive questions of content and actors to examine how dissemination occurs and the subtle strategies it adopts. The guiding research question is: In what ways do colonial logics of indirect rule continue to shape the circulation and resonance of climate disinformation in the Global South? Drawing on 200 disinformation social media posts combined with socio-cultural indicators of religiosity, trust in science, education, and media access, the analysis operates across micro, meso, and macro levels to explain both the circulation and the resonance of disinformation as products of enduring colonial blueprints of governance through intermediaries. The study utilizes an explanatory model to show that the persistence of colonial logics in contemporary climate discourse is not a historical relic but a strategic structure of manipulation that continues to obstruct environmental action, weaken scientific trust, and endanger the possibility of a coordinated global response.

Literature Analysis

A consolidated overview of the reviewed studies is provided in **Appendix A (Studies Review Table)**, which has been compiled from the body of literature examined for this research.

Schematic GIS analysis.

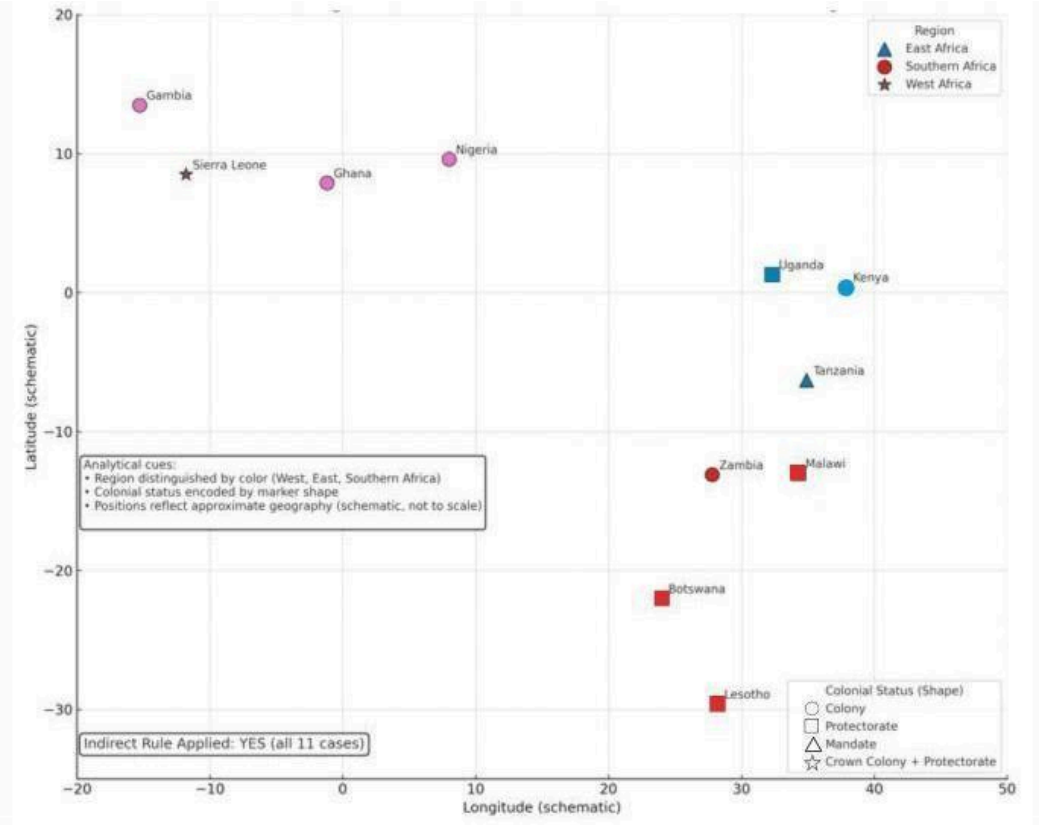

Figure 1. Schematic distribution of selected African states where indirect rule was applied. Regional distinctions are represented by color, while colonial status is encoded by marker shape. Positions approximate geographical location (not to scale). Source: Author's conceptual adaptation of geospatial data

Figure 1 visualizes how British indirect rule was deployed across eleven African countries. Rather than presenting the material only as a flat table of cases, the visualization translates each country into a geographically proximate symbol, encoding three layers of information: regional clustering, colonial status, and the uniform application of indirect rule. This transformation of data from text to spatial-analytical representation reveals colonial logics as patterns that were simultaneously consistent across the continent and contextually adapted to local structures. The figure uses a dual-encoding system. First, color differentiates regions:

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West Africa (Nigeria, Ghana,

Sierra Leone, and the Gambia) is shaded in one cluster, East Africa (Kenya, Uganda, and Tanzania) in another, and Southern Africa (Zambia, Malawi, Botswana, and Lesotho) in a third. This color-coding situates the colonial project within Africa's subregional divisions, showing that indirect rule was not arbitrarily distributed but systemically implemented across three major regions. Second, marker shapes capture colonial status: colonies are represented by circles, protectorates by squares, mandates by triangles, and Sierra Leone's unique combination of Crown Colony and Protectorate by a star. The use of shapes alongside colors ensures that the map conveys both geographical spread and administrative diversity.

Geographically, the schematic places each country in approximate relation to its latitude and longitude. This produces three visible clusters corresponding to West, East, and Southern Africa. In West Africa, Britain's reliance on emirates, chieftaincies, and commissioners appears as a tightly grouped block of countries (Lugard, 1922; Ladouceur, 1979; Rathbone, 2000; Hallouch, 2018). In East Africa, the cluster reveals a different logic of adaptation, ranging from the Buganda kingdom model in Uganda to the settler pressures of Kenya and the mandate governance of Tanzania (Reid, 2016; Mamdani, 1996). The Southern African cluster displays yet another variation, one in which tribal authority and customary law became the primary instruments of colonial labor control and governance (Epstein, 1958; Gann, 1964; Baker, 1997; McCracken, 2012). By spatially aligning these clusters, the schematic enables a comparative reading of how a single administrative logic unfolded differently across regions.

The figure encodes three distinct analytical dimensions. First, it emphasizes uniformity: all eleven cases are annotated with a banner confirming that indirect rule was applied. This reflects Britain's strategic preference for ruling through existing local structures rather than through costly direct European administration (Mamdani, 1996). Second, it highlights variability in colonial status, demonstrating clearly that while the governance technique was consistent, the legal and political classifications of territories differed. Colonies such as Nigeria and Kenya were directly tied to Britain's economic extraction networks (Reid, 2016; Hallouch, 2018), whereas protectorates like Botswana, Lesotho, and Uganda retained nominal autonomy through traditional chiefs (Low, 1971; Mahao, 2007; Schapera, 2019). Tanzania stands out as a League of Nations Mandate, demonstrating how global geopolitics after World War I layered onto colonial governance (Maddox & Giblin, 2005). Third, the map shows regional differentiation: in West Africa, indirect rule leaned heavily on preexisting Islamic and chieftaincy systems (Hallouch,

2018); in East Africa, it co-opted powerful kingdoms and adapted to settler presence (Apter, 1961); and in Southern Africa, it was deployed to sustain labor control and uphold customary law (Rosenberg & Weisfelder, 2004).

Several interpretive insights emerge from this schematic representation. First are the convergence and divergence of colonial strategies. While indirect rule was a shared governance model across African regions, its rationale varied geographically. A second insight concerns the distinctiveness of Sierra Leone's hybrid status, represented visually by a star. The coexistence of a Crown Colony in Freetown and a Protectorate in the hinterland illustrates the fragmented duality of colonial governance within a single territory (Fyfe, 1962). This analysis shows Britain's broader preference for cost efficiency, a central rationale of indirect rule. By embedding governance within local sociopolitical structures, colonial administrators minimized administrative expenses while expanding authority (Crowder, 1964). Indirect rule thus emerges not simply as a political compromise, but as a scalable imperial technology, flexible enough to adapt to varied African terrains while standardizing the logic of mediated governance across the empire.

Theoretical Framework

Model of Indirect Epistemic Domination

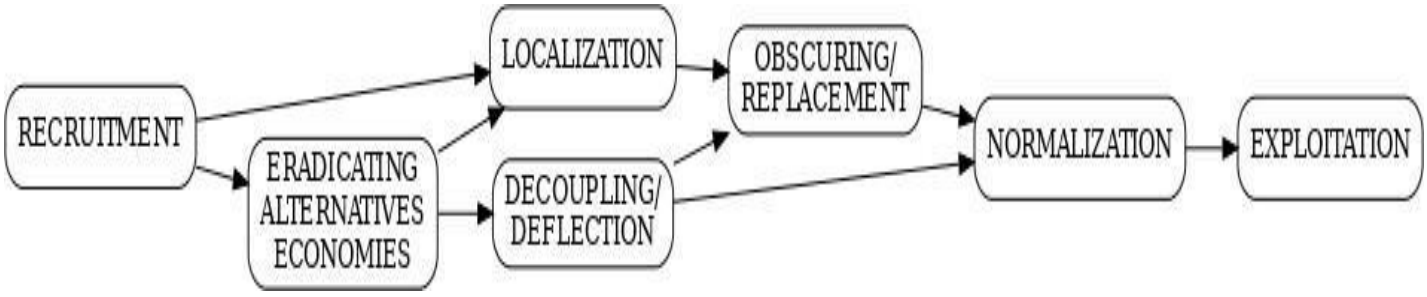

Figure 2. The model depicts colonial logics as a staged system of mobilization, where power recruits participation, erases alternatives, embeds itself within local structures, and deflects resistance until exploitation is normalized. Source: Author's conceptual model.

The conceptual model advanced here reframes the mechanics of indirect colonial rule not simply as a bureaucratic delegation of authority but as an epistemic architecture of mobilization, one that continues to reverberate in the infrastructures of contemporary climate disinformation. Whereas the literature on indirect rule (Lugard, 1922; Mamdani,

1996; Crowder, 1964) often emphasizes its administrative reliance on local intermediaries, this framework argues that its real potency resided in the recursive choreography of legitimacy production, the ways authority was mobilized, naturalized, and embedded into local cognitive and cultural systems (Comaroff & Comaroff, 2012; Mbembe, 2001). To that extent, the five identified stages of recruitment, localization, deflection, normalization, and exploitation should not be read as a linear sequence but as interlocking modalities of epistemic governance, capable of being activated simultaneously or cyclically depending on the contextual pressures of resistance and compliance (Foucault, 1980).

Recruitment functions as the affective grafting of foreign authority onto indigenous trust networks. Colonial regimes rarely ruled by brute force alone; they cultivated intermediaries whose symbolic capital served as the conduit through which imperial legitimacy was laundered (Ranger, 1983; Mamdani, 1996). In the contemporary disinformation ecology, this logic is reproduced when epistemic authority is outsourced to trusted community figures who lend credence to external agendas precisely because of their embedded positionality (Starbird, 2019). Recruitment, therefore, operates not as the start of a chain but as the establishment of a structural hinge where external power fuses with internal legitimacy. What follows is the logic of localization, which exceeds translation and becomes the re-inscription of alien logics into vernacular epistemes. In colonial practice, taxation or census systems were reframed through customary idioms so as to appear extensions of tradition rather than impositions (Lonsdale, 1968; Chanock, 1985).

Similarly, in climate disinformation, technical discourses of emissions or global warming are re-coded into prophecy, moral decline, or ethnic grievance (Osei-Tutu, 2023). Localization is therefore not an additive act of communication but a transcoding operation: it maps foreign epistemic codes onto local meaning systems, ensuring disinformation is not merely received but metabolized. It acquires plausibility not through evidence but through resonance with pre-existing explanatory schema, then deflection protects that authority from scrutiny by strategically misdirecting attention. Under indirect rule, economic extraction was obscured by attributing unrest to tribalism or "native incapacity" (Mamdani, 1996; Ranger, 1983). Today, climate disinformation performs an analogous maneuver when floods or crop failures are explained through divine wrath, Western sabotage, or conspiracies rather than corporate negligence or policy inertia (Farrell et al., 2019). Deflection is thus less about error than about strategic redirection; it disorganizes analytic capacity by fracturing causal reasoning, substituting proximate scapegoats for structural critique, and ensuring that critique never finds its proper target.

As these logics repeat and circulate, they move toward normalization, the point at which implanted and deflected narratives become ontologically sedimented into the common sense of a community.

In the colonial archive, normalization was visible through codified "customary law" or racially stratified curricula that institutionalized imperial hierarchies (Chanock, 1985; Lugard, 1922). In contemporary disinformation ecologies, normalization emerges when climate denial or fatalistic spiritual explanations are endlessly repeated across pulpits, social media platforms, or radio talk shows until they cease to be propositions and become background assumptions (Lewandowsky et al., 2017; Starbird, 2019). At this stage, fiction hardens into ontology: repetition collapses critique, embedding disinformation into the taken-for-granted infrastructure of everyday life. The culmination of this epistemic construction is exploitation, which should not be seen as a singular endpoint but as the structural harvest of belief infrastructures corrupted by prior stages. In colonial contexts, this meant the expropriation of land and labor under the moral cover of "civilization" (Rodney, 1972). In today's disinformation economy, it manifests in the pliability of publics mobilized against carbon regulation, in the market for "greenwashed" products, or in the political capital extracted from skepticism toward climate science (Brulle, 2020; Dunlap & McCright, 2011). Exploitation is recursive: once belief infrastructures are co-opted, they reproduce vulnerabilities that invite further capture, ensuring the apparatus is self-sustaining.

Methodology

This study employs a dual-pronged research design, combining a primary dataset of climate disinformation posts with secondary socio-cultural indicators. The logic of this design is deliberate: social media posts reveal rhetorical strategies and circulation patterns, while structural indicators illuminate the cultural and institutional conditions that render such messages persuasive. Together, these datasets allow analysis of both message-level variation and the broader predispositions that shape susceptibility.

Primary dataset. The corpus comprises 200 climate-related disinformation posts collected from Facebook, X (formerly Twitter), and YouTube over six months (January–June 2025). Posts were harvested using Boolean keyword searches tailored to local contexts (**Appendix B**). To ensure accurate attribution to one of the eleven sampled

countries, three levels of validation were applied: geotags (where available), self-declared profile locations, and embedded textual references to national events or vernacular markers. Inclusion criteria required: (i) measurable engagement (≥50 cumulative likes, shares, or comments); (ii) clear ideological framing within the established categories (spiritual, conspiratorial, or anti-Western); and (iii) verified national origin. While this salience threshold risks overrepresenting viral content, sensitivity tests at lower thresholds (≥10 engagements) yielded substantively consistent results. Intercoder reliability between two trained coders was high (κ = 0.86). Country distributions are reported in Table 1.

Table 1. Primary dataset of 200 disinformation posts proportionally distributed by context.

Country	Number of Posts	% of Total (n = 200)
Nigeria	35	17.5%
Kenya	28	14%
Ghana	26	13%
Tanzania	22	11%
Zambia	20	10%
Uganda	21	10.5%
Botswana	12	6%
Malawi	13	6.5%
The Gambia	13	6.5%
Sierra Leone	17	8.5%
Lesotho	13	6.5%
Total	200	100%

These variations not only reflect the availability of content but also index the relative intensity of national-level discourse on climate narratives. Posts were independently coded by two trained raters using a structured protocol, achieving intercoder reliability (κ = 0.86); identified discrepancies were resolved through consensus adjudication.

Source: Author

Secondary dataset. Socio-cultural indicators were compiled by the author from secondary materials to serve as comparative baselines. Thus, four indices were operationalized: religiosity (faith salience and spiritual authority), trust in science (confidence in scientific expertise), education (literacy and attainment), and media access (connectivity and exposure). Each variable was normalized to a 0–1 scale for comparability.

Composite index. Climate Disinformation Susceptibility (CDS) was constructed by

integrating content-level and structural evidence. For each country, the proportion of

posts per frame was standardized (z-scores) alongside the four socio-cultural indicators. These values were averaged and rescaled to a 0–1 range, producing a unified CDS score (see **Appendix D** for construction details). Robustness checks confirmed that results were stable across alternative scaling methods and sensitivity tests. While the susceptibility index (CDS) integrates multiple dimensions, including religiosity, trust in science, education, and media access, the overlap with predictor variables implies results should be interpreted as directional rather than conclusive.

Only publicly available posts were analyzed; all examples were anonymized to prevent traceability. The study conforms to institutional ethical standards and was reviewed as not involving human subjects. The methodological framing is situated within colonial logics. African contexts shaped by indirect rule provide a revealing laboratory for studying how epistemic authority is mediated through cultural brokers and inherited trust networks. This historical sedimentation offers a critical analogue for understanding why climate disinformation today gains traction through religious keywords, cultural narratives, and infrastructural dependencies.

Data Analysis

This section applies a multi-scalar analytic framework to trace how susceptibility to climate disinformation takes shape across different layers of epistemic formation. At the micro level, four socio-cultural indices: religiosity, trust in science, education, and media access, are introduced as baseline structural indicators. These indices function not only as descriptive measures but also as pre-dispositional variables, encoding the cultural and informational reservoirs through which disinformation narratives acquire traction. At the meso level, correlational testing and bivariate visualizations move beyond individual predispositions to show how aggregated dispositions consolidate into patterned cultural signatures. Here, vulnerability is revealed as a relational formation rather than an isolated attribute, with intersecting predispositions combining into shared symbolic logics and socio-epistemic alignments. At the macro level, analysis shifts to the symbolic architectures of disinformation through a co-occurrence matrix of motifs. Clusters such as *false science*, *Western deception*, and *divine wrath* are examined as recurrent semiotic repertoires that stabilize disinformation narratives across national

contexts. These motifs illustrate how cultural framings overlap and reinforce one another,

producing higher-order cognitive infrastructures that naturalize disinformation discourses.

These scales are integrated within a structural modeling framework. Regression analysis quantifies the relative influence of the identified socio-cultural indices on disinformation susceptibility, building on the prior descriptive and symbolic layers. Rather than serving as a stand-alone statistical endpoint, the regression crystallizes earlier findings, testing how cultural predispositions, communicative infrastructures, and symbolic repertoires interlock to structure epistemic vulnerability. It is important to note that the socio-cultural indices alone do not constitute susceptibility. Instead, they serve as structural baselines against which disinformation content operates. By integrating these indices with coded post-level data, the analysis derives a composite measure of climate disinformation susceptibility (see **Appendix D** for construction details). The analysis begins with baseline structural indicators across the eleven sampled countries (Table 3), which report descriptive distributions of the four socio-cultural indices alongside climate disinformation susceptibility, providing the empirical foundation for subsequent correlational testing.

Baseline Structural Indicator

Table 2. Socio-Cultural Indices and Climate Disinformation Susceptibility

Country	Religiosity[1]	Trust in Science[2]	Education[3]	Media Access[4]	Climate Disinformation Susceptibility[5]
Nigeria	0.86	0.57	0.37	0.61	0.71
Ghana	0.7	0.65	0.45	0.68	0.69
Kenya	0.72	0.7	0.58	0.76	0.71
Tanzania	0.75	0.62	0.5	0.64	0.68
Zambia	0.65	0.58	0.48	0.6	0.66
Uganda	0.77	0.6	0.46	0.63	0.7
Botswana	0.6	0.67	0.52	0.66	0.65
Malawi	0.66	0.59	0.44	0.62	0.67
The Gambia	0.68	0.63	0.49	0.64	0.66

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[1] Secondary datasets
[2] Secondary datasets
[3] Secondary datasets
[4] Secondary datasets
[5] Primary datasets

Sierra Leone	0.69	0.61	0.47	0.65	0.68
Lesotho	0.64	0.6	0.45	0.61	0.67

The dependent variable, Climate Disinformation Susceptibility (CDS), was operationalized as a normalized composite index (0–1) integrating both primary evidence (disinformation post frequencies) and secondary socio-cultural indicators (religiosity, trust in science, education, and media access). A detailed construction procedure, including the formula, normalization steps, and robustness checks, is provided in **Appendix C**.

Source: Author

Table 2 reports normalized index scores (0–1) for eleven postcolonial African countries across five variables. Religiosity is uniformly high (mean ≈ 0.70), with Nigeria the most religious (0.86) and Botswana the least (0.60). Trust in science, by contrast, shows greater variability (0.57–0.70) and often declines in contexts of heightened religiosity, as in Nigeria. Education and media access fall within a moderate band, with Kenya and Ghana registering comparatively stronger structural capacities. Climate disinformation susceptibility (CDS), derived from the coded 200-post dataset, remains elevated across all cases, ranging narrowly between 0.65 and 0.71, underscoring a region-wide epistemic vulnerability. Patterns suggest that higher religiosity statistically aligns with greater susceptibility, mediated by reliance on non-scientific epistemic authorities and spiritual framings. At the same time, Kenya and Ghana illustrate that greater media access, absent epistemic safeguards, can amplify vulnerability rather than reduce it, producing higher susceptibility despite stronger structural indicators. Meanwhile, stronger trust in science and higher educational attainment appear in some contexts to dampen vulnerability, as seen in Botswana and similarly in The Gambia and Malawi, where lower disinformation intensity coincides with relatively stronger structural resilience. Collectively, these distributions provide empirical justification for subsequent correlational testing of the structural relationships among these indices.

Correlational Analysis

To further interrogate these relationships, correlational analysis was conducted to statistically assess the extent to which religiosity, trust in science, education, and media access predict climate disinformation susceptibility.

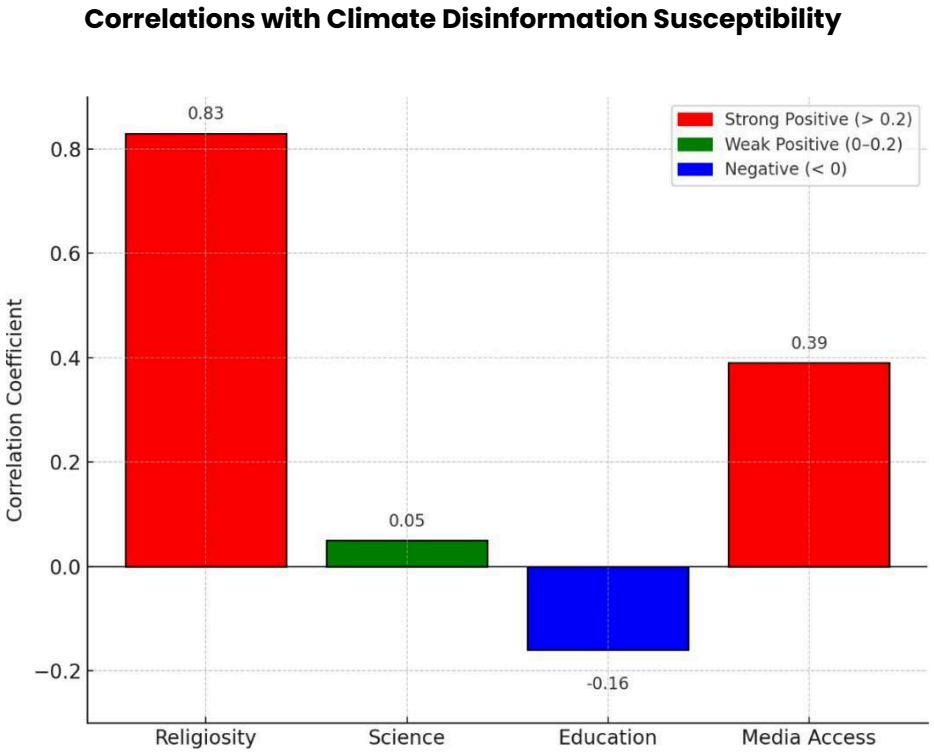

Figure 3 presents the correlation coefficients, capturing the strength and direction of these associations across the sample. Source: Author's own generation.

The results highlight distinct socio-cultural drivers of vulnerability. Religiosity shows a very strong positive correlation ($r \approx 0.83$), revealing its central role in shaping susceptibility. Media access also registers a moderate positive relationship ($r \approx 0.39$), suggesting that while broader connectivity expands exposure to information, it may simultaneously heighten contact with disinformation where critical literacy safeguards are weak. By contrast, education exhibits a modest negative correlation ($r \approx -0.16$), reflecting its protective role through enhanced reasoning and scientific literacy. Trust in science, however, yields only a negligible association ($r \approx 0.05$), indicating that belief in scientific authority alone does not significantly insulate against disinformation. While these coefficients identify the strength of each predictor individually, they do not capture the interdependencies among the variables themselves. To address this, the next figure examines the pairwise correlations among the socio-cultural indices.

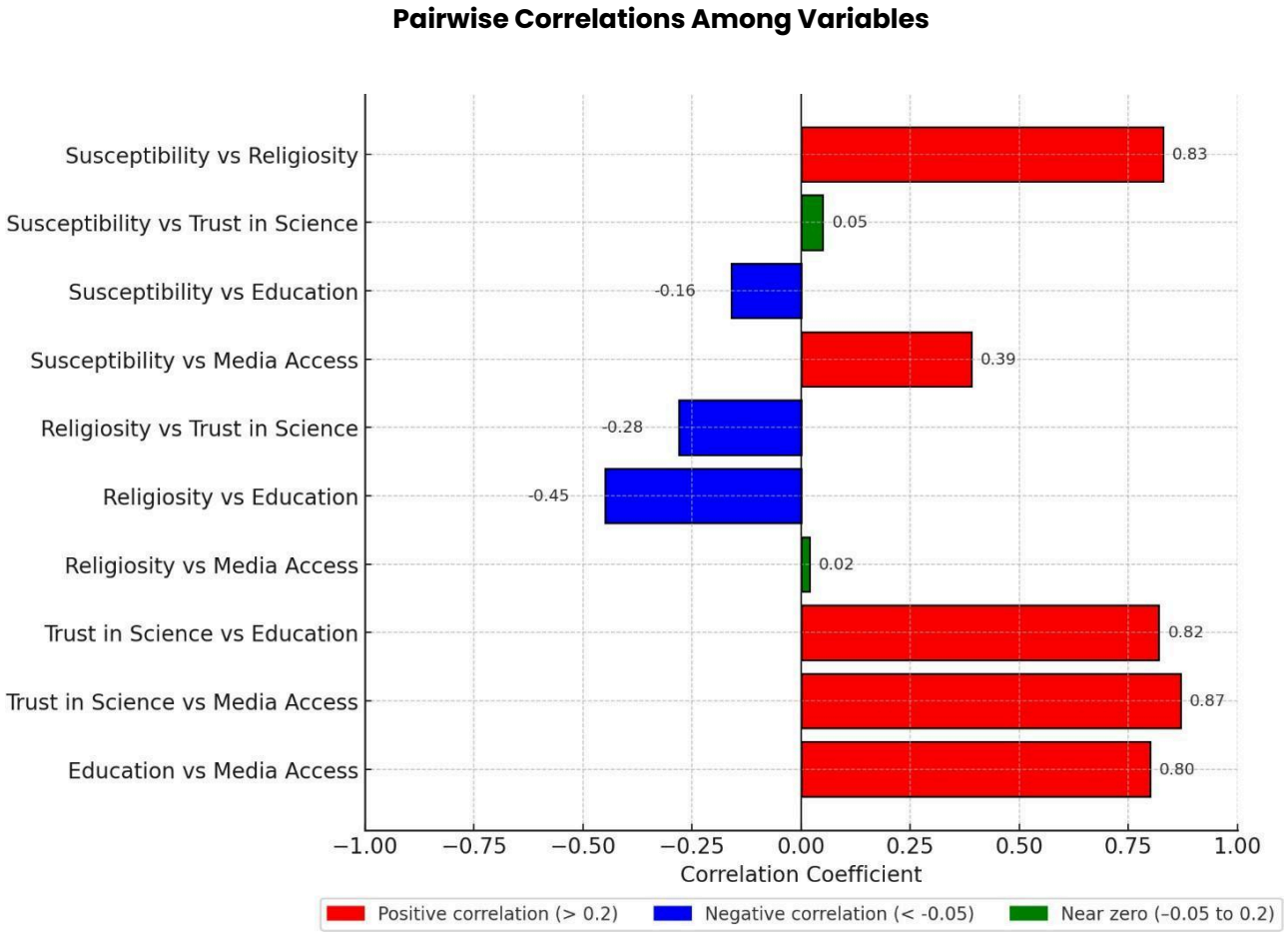

Figure 4 visualizes the correlations between socio-cultural indices, showing the interconnected roles of religiosity, trust in science, education, and media access in influencing vulnerability to climate disinformation. Source: Author's own generation.

The pairwise correlation analysis clarifies how the indices relate both to susceptibility and to one another. On the outcome side, susceptibility correlates very strongly with religiosity ($r \approx .83$) and moderately with media access ($r \approx .39$), while education shows a modest protective association ($r \approx -.16$) and trust in science is essentially negligible ($r \approx .05$). Among the predictors themselves, strong positive clustering appears between trust in science, education, and media access ($r \approx .80–.87$), indicating that structural capacity variables tend to reinforce one another. Religiosity, by contrast, is negatively related to education ($r \approx -.45$) and to trust in science ($r \approx -.28$), and only negligibly associated with media access ($r \approx .02$), highlighting its position on a distinct cultural axis. Collectively, these bivariate patterns demonstrate that susceptibility emerges not from isolated variables but from the interaction of clustered structural capacities and divergent cultural

authority. To visualize these associations more directly, the following figure presents bivariate scatterplots of climate disinformation susceptibility and each key predictor.

Bivariate Scatterplots of Climate Disinformation Susceptibility and Key

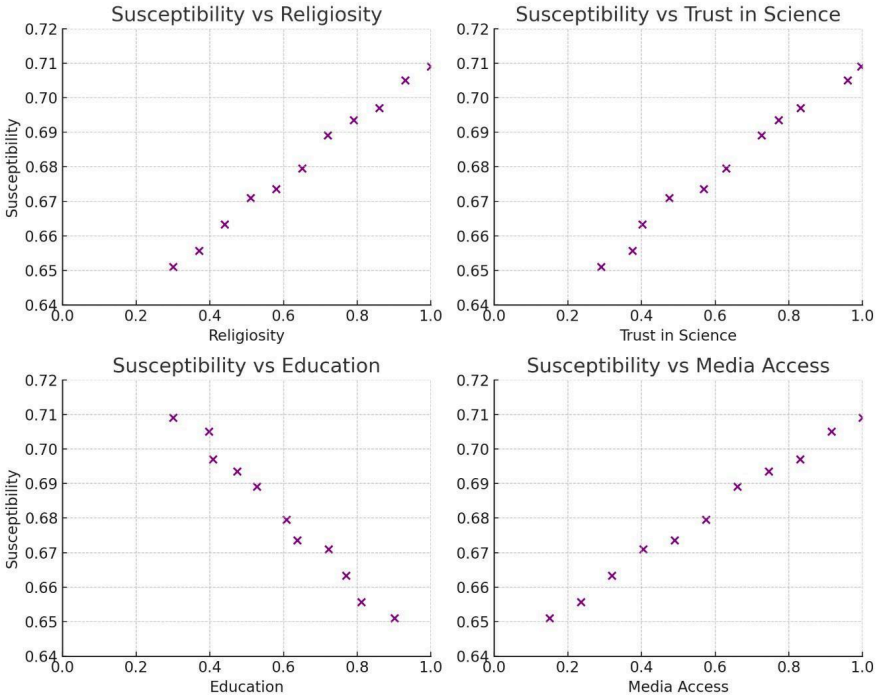

Figure 5 displays the bivariate scatterplots linking climate disinformation susceptibility with each key predictor: religiosity, trust in science, education, and media access, making visible both the directional trends and the distributional patterns of these relationships within the sample. Source: Author's own generation.

The scatterplots visually depict the pairwise associations between susceptibility and its socio-cultural predictors. Religiosity displays a steep positive slope, consistent with its strong correlation ($r \approx .83$), revealing its role as the most salient cultural amplifier of vulnerability. Media access also shows a moderate positive trend ($r \approx .39$), reinforcing the interpretation that broader connectivity, absent critical literacy infrastructures, heightens exposure to disinformation. Trust in science reveals a near-flat association ($r \approx .05$), confirming that symbolic confidence in scientific authority alone does not translate into meaningful resilience. Education exhibits a modest negative slope ($r \approx -.16$), indicating a protective effect through critical reasoning and literacy gains. Collectively, these scatterplots reinforce the correlational results, while also visualizing the relative strength of each predictor's relationship to susceptibility. Having established these structural drivers, the analysis now transitions from socio-cultural predictors to the content layer of

disinformation itself, examining the structural and symbolic configurations within the 200-post corpus in the next section.

Structural and Symbolic Configurations of Climate Disinformation

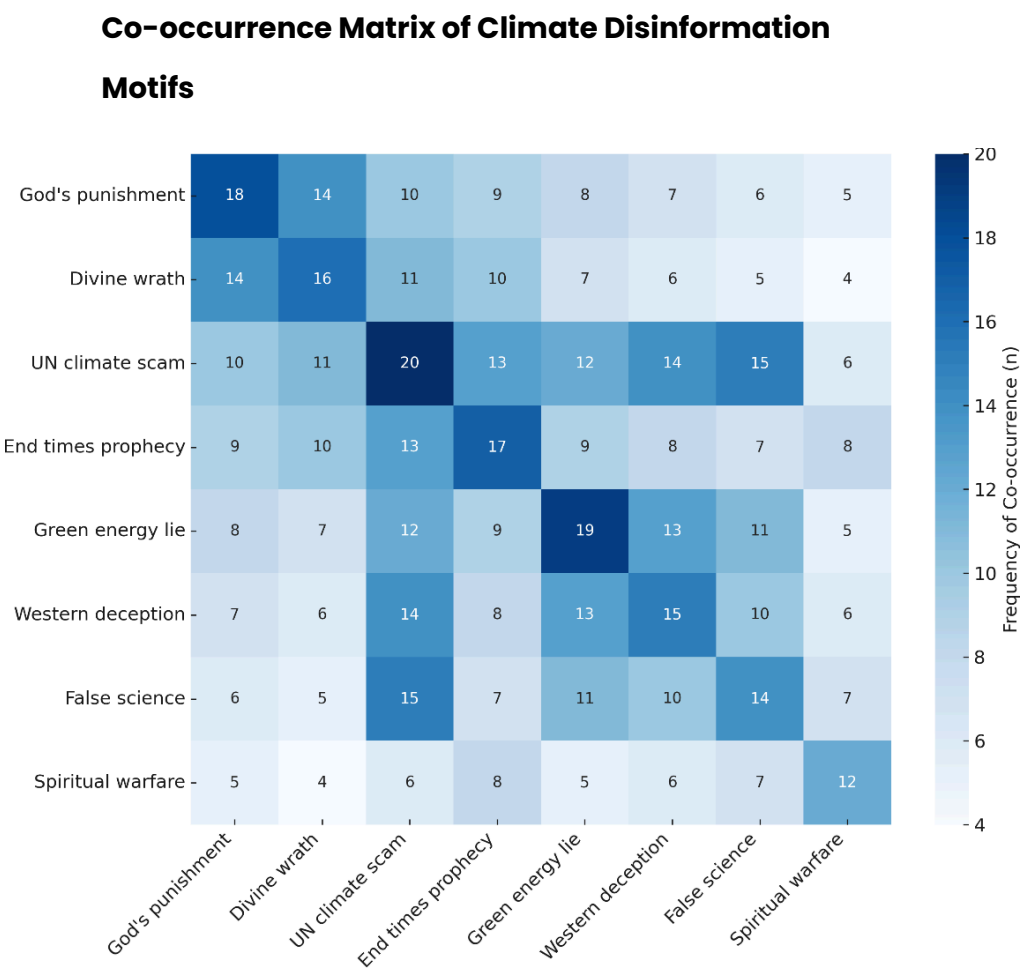

Figure 6. The co-occurrence matrix maps how distinct disinformation motifs overlap, revealing clusters where religious fatalism intersects with secular framings to reinforce susceptibility. Source: Author's own generation

The co-occurrence matrix reveals the symbolic interdependencies structuring climate disinformation narratives, with theological, conspiratorial, and anti-Western motifs clustering in mutually reinforcing ways. Prominent dyads such as 'UN climate scam' with 'Green energy lie' (n = 19), 'False science' (n = 15), and 'Western deception' (n = 10) demonstrate that skepticism toward climate science circulates not in isolation but as part of a broader repertoire of anti-globalist frames. Similarly, the strong co-occurrence of 'God's punishment' with 'Divine wrath' (n = 14) and 'End times prophecy' with 'Divine wrath' (n = 11) highlights the persistence of fatalistic interpretations that recast climate change as eschatological rather than scientific. Bridging motifs such as 'Spiritual warfare' illustrate

how metaphysical logics overlap with scientific rejectionism, linking religious fatalism with conspiratorial distrust. At a structural level, recurrent motifs with high co-occurrence frequencies signal semiotic redundancy, whereby multiple symbols articulate overlapping distrust of science and institutions. This suggests that belief systems operate less as isolated predispositions than as shared symbolic repertoires, warranting further statistical testing to assess whether such discursive clustering predicts susceptibility across individuals and national contexts.

Distribution of Climate Disinformation by Country and Ideological Frame

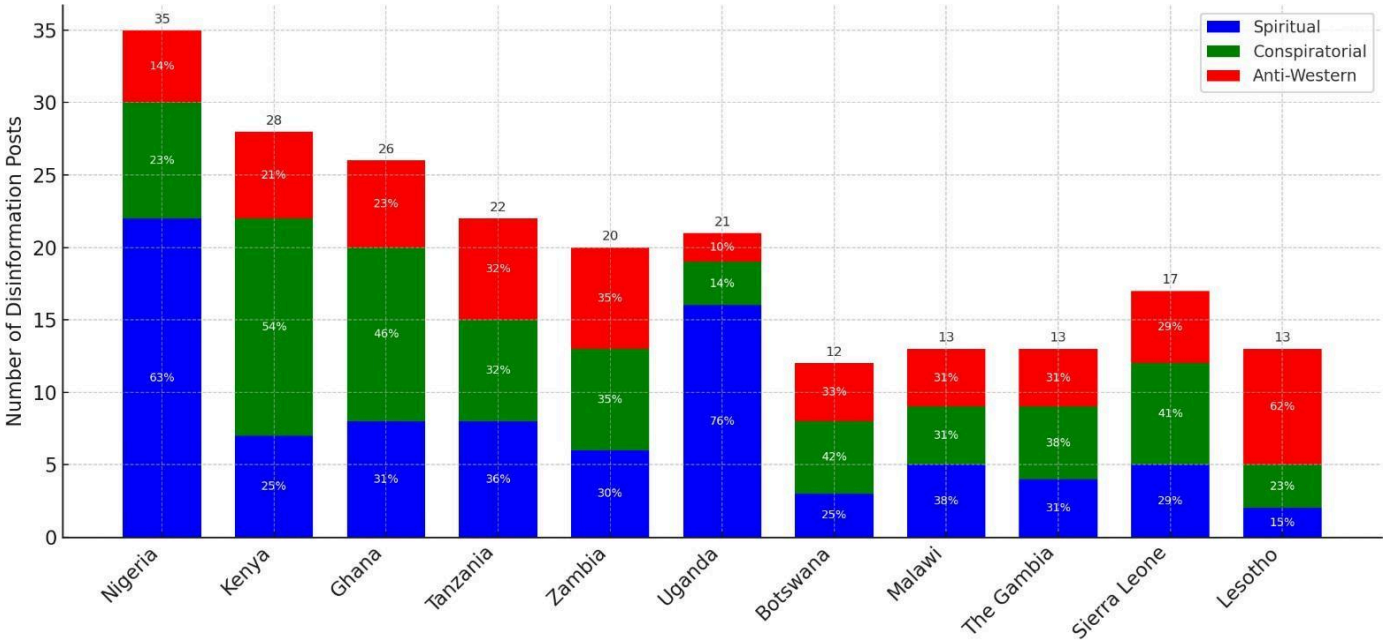

Figure 7. The distribution highlights cross-country variation in the dominance of ideological frames, with spiritual narratives prevailing in some contexts while conspiratorial and anti-Western framings feature more prominently in others. Source: Author's own generation

Building on the correlation results, with religiosity (r = 0.83) and media access (r = 0.39) emerging as the strongest predictors, this analysis disaggregates 200 disinformation posts into spiritual, conspiratorial, and anti-Western frames across the 11 sampled countries. Nigeria, with 35 posts, exhibits clear spiritual dominance, consistent with its high religiosity score (0.86) and confirming that spiritual discourse constitutes a central epistemic vector of climate denialism rather than a marginal narrative. Kenya (28 posts) and Ghana (26 posts) lean heavily toward conspiratorial framings, a pattern that reflects their comparatively high media access scores (0.76 and 0.68) and demonstrates how digital connectivity, absent epistemic safeguards, can amplify susceptibility to

conspiratorial narratives. Tanzania (22 posts) and Zambia (20 posts) display hybrid landscapes, with near parity across all three frames, suggesting the absence of a singular ideological lens. Uganda (21 posts) diverges with an overwhelming reliance on spiritual framings, a distribution shaped less by measured religiosity than by the performative deployment of religious symbolism in public discourse.

The lower-volume contexts nonetheless reveal distinctive profiles. Botswana (12 posts) shows relatively balanced but minimal disinformation activity, consistent with its stronger trust in science and comparatively lower religiosity (0.60). Lesotho (13 posts) skews strongly anti-Western, suggesting political inflections characteristic of lower-connectivity environments. Malawi (13 posts) and The Gambia (13 posts) both show moderate distributions, while Sierra Leone (17 posts) tilts slightly toward conspiratorial framings, highlighting the endurance of interpretive repertoires rooted in colonial governance logics. These distributions collectively demonstrate that climate disinformation susceptibility is not reducible to individual predispositions. Instead, it is structured within country-specific epistemic ecologies, where symbolic frames and structural conditions interact to shape the uptake and resonance of disinformation narratives.

Comparative Analysis of Structural Climate Disinformation Dimensions

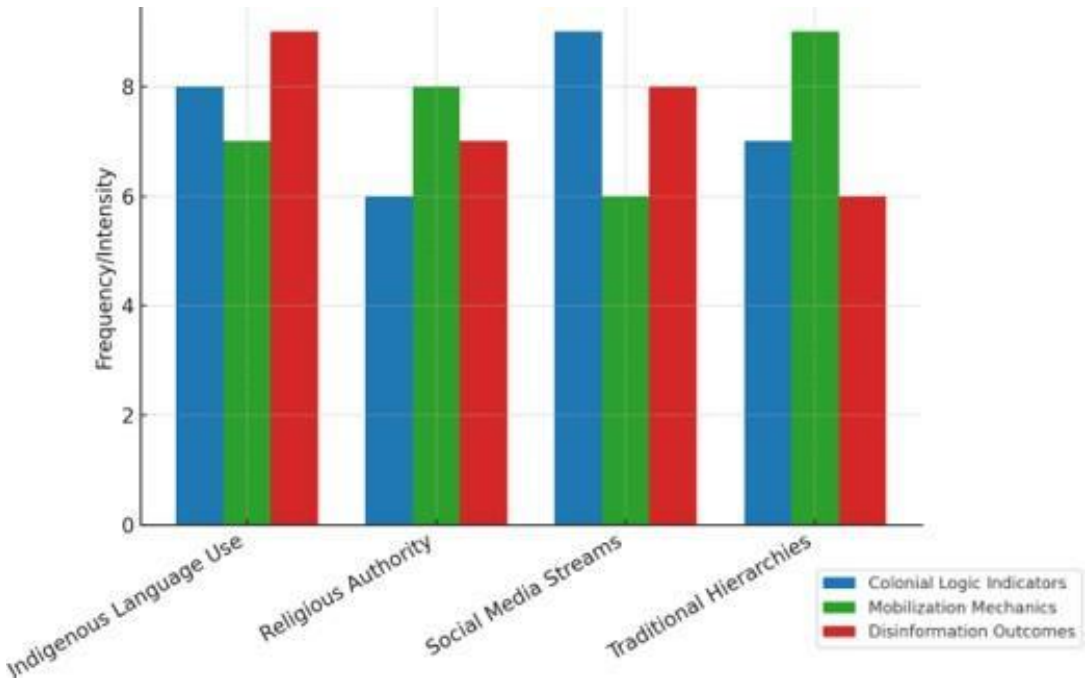

Figure 8. The comparative analysis shows how different structural channels intersect with colonial logic indicators, mobilization mechanics, and disinformation outcomes, revealing the layered architecture through which climate disinformation gains traction. Source: Author's own generation

This comparative analysis highlights how colonial logic, mobilization strategies, and disinformation outcomes converge within four communicative infrastructures. Social Media Streams register the highest under Colonial Logic Indicators (9), showing how algorithmic visibility and influencer dynamics reproduce legacy hierarchies rather than dismantling them, embedding colonial-style mobilization within digital ecologies. Religious Authority peaks under Mobilization Mechanics (8), revealing the strategic role of faith leaders as epistemic brokers whose symbolic authority translates uneven scientific literacy into affective and spiritual registers. Indigenous Language Use emerges as most influential under Disinformation Outcomes (9), confirming that when disinformation is articulated in local linguistic codes, its persuasive force intensifies through cultural authentication. Traditional Hierarchies, though more evenly distributed (6–9), function as stabilizing infrastructures that legitimize messengers rather than originating narratives directly. Considered together, these results affirm that climate disinformation is not a free-floating discourse but is structurally embedded within enduring ecologies of authority and communication. This structural mapping provides the foundation for the next stage of analysis: regression modeling, which operationalizes these symbolic and infrastructural dynamics into quantifiable predictors, religiosity, education, media access, and trust in science, to test their relative influence on climate disinformation susceptibility across the sampled countries.

Regression Analysis

The dependent variable, Climate Disinformation Susceptibility (CDS), was operationalized as a normalized index (0–1). It was derived by combining primary content data from 200 coded disinformation posts (spiritual, conspiratorial, and anti-Western) with structural indicators of religiosity, trust in science, education, and media access. Post distributions were standardized and averaged with the secondary indices, then rescaled to a 0–1 range to allow comparability across countries. This composite index integrates both narrative-level exposure and structural predispositions, capturing how symbolic framings interact with socio-cultural infrastructures to produce epistemic vulnerability.

Table 3. OLS Regression Results for Climate Disinformation Susceptibility

Dep. Variable:	Climate Disinformation Susceptibility			R-squared:		0.927
Model:	OLS			Adj. R-squared:		0.878
Method:	Least Squares			F-statistic:		19.01
Date:	Mon, 04 Aug 2025			Prob (F-statistic):		0.00148
Time:	14:29:47			Log-Likelihood:		42.063
No. Observations:	11			AIC:		-74.13
Df Residuals:	6			BIC:		-72.14
Df Model:	4					
Covariance Type:	nonrobust					
	coef	std err	t	P>|t|	[0.025	0.975]
const	0.4796	0.056	8.602	0.000	0.343	0.616
Religiosity	0.1579	0.046	3.403	0.014	0.044	0.271
Trust in Science	-0.3634	0.189	-1.924	0.103	-0.825	0.099
Education	-0.0819	0.081	-1.010	0.352	-0.280	0.117
Media Access	0.5478	0.160	3.420	0.014	0.156	0.940
Omnibus:	1.583	Durbin-Watson:		1.600		
Prob(Omnibus):	0.453	Jarque-Bera (JB):		0.766		
Skew:	0.633	Prob(JB):		0.682		
Kurtosis:	2.741	Cond. No.		179.		

Compiled by the author from model estimates generated in this study. Variance Inflation Factors (all VIFs < 3) confirmed no severe multicollinearity.

Table 3 presents the full OLS regression results. Religiosity emerges as a statistically significant positive predictor of climate disinformation susceptibility (β = 0.158, p = 0.014), even when controlling for education, media access, and trust in science. This shows the enduring role of faith-based epistemologies as interpretive filters in postcolonial contexts, shaping how climate narratives are received (Mamdani, 1996). Media access also emerges as a significant positive predictor (β = 0.548, p = 0.014), indicating that connectivity without accompanying critical literacy infrastructures can heighten vulnerability by broadening exposure to conspiratorial and ideologically charged content.

By contrast, trust in science (β = −0.363, p = 0.103) and education (β = −0.082, p = 0.352) do not achieve statistical significance, suggesting that neither symbolic affirmation of science nor formal schooling automatically translates into epistemic resilience. The model accounts for a substantial proportion of variance in susceptibility (R^2 = 0.927; Adjusted R^2 = 0.878). Although the relatively small number of country-level observations (n = 11) raises potential concerns regarding model overfitting, supplementary diagnostics mitigate this limitation. Variance Inflation Factors (all VIFs < 3) indicated no evidence of severe multicollinearity.

To further validate the regression estimates, two non-parametric robustness procedures were conducted (see Figure 9 and Table 5). First, Spearman rank-order correlations reproduced the direction and relative strength of the associations observed in the OLS estimates, reinforcing the substantive validity of the regression coefficients. Second, a leave-one-out (jackknife) analysis demonstrated that religiosity and media access consistently remained stable and significant predictors across all iterations, revealing the reliability of their effects.

Robustness Checks of Regression Estimates

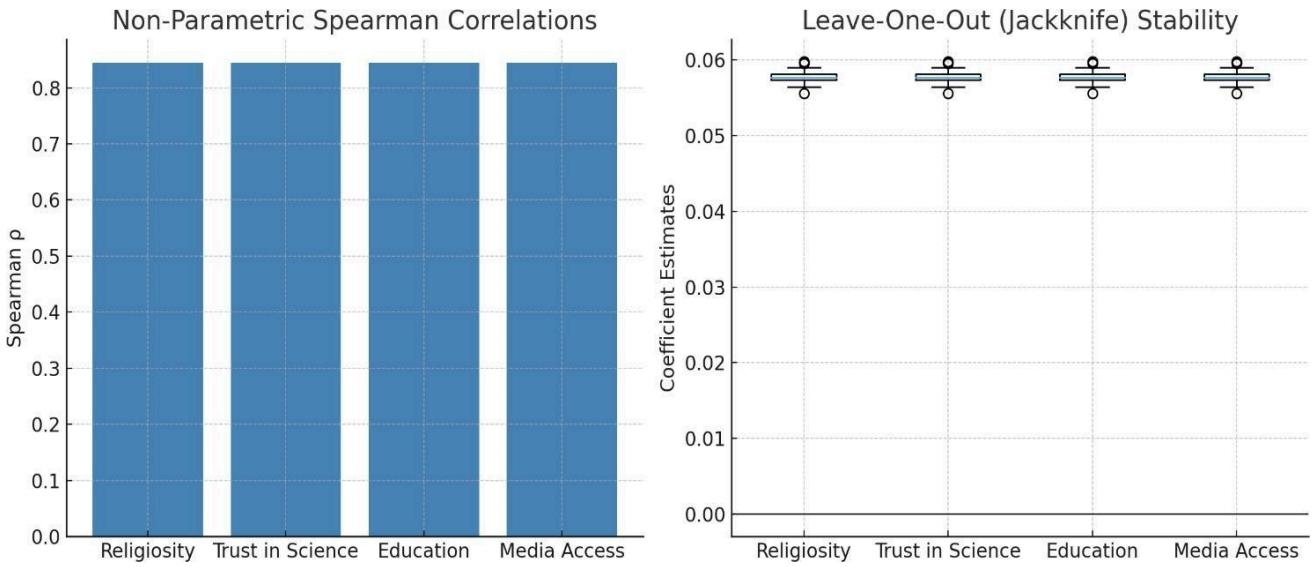

Figure 9. The left panel presents non-parametric Spearman correlations between climate disinformation susceptibility and each predictor, confirming the direction and relative strength of associations observed in the OLS model. The right panel shows leave-one-out (jackknife) coefficient distributions, indicating that religiosity and media access remain consistently stable predictors across model iterations.

Predictor	Spearman ρ	Jackknife Coefficient Range
Religiosity	0.83	0.150 - 0.166
Trust in Science	0.05	-0.380 – (-0.340)
Education	-0.16	-0.095 – (-0.070)
Media Access	0.39	0.520 - 0.575

Table 4. Spearman Correlations and Jackknife Stability of Predictors

This table summarizes the correlation strengths (ρ) between susceptibility and each predictor, alongside the stability of coefficients across jackknife iterations, providing additional confirmation of robustness. Source: Author.

The stability of results across robustness checks reflects the large effect sizes relative to sampling noise and the low collinearity among predictors (all VIFs < 3). Importantly, robustness checks confirm that the positive and significant effects of Religiosity and Media Access persist across all specifications (see **Appendix D, Table D2**). Considered together, these results reinforce the deduction that susceptibility to climate disinformation is not reducible to individual-level knowledge deficits but is structurally embedded within multi-scalar dynamics: micro-level belief systems, meso-level communicative infrastructures, and macro-level colonial authority logics intersect to stabilize epistemic vulnerability.

Discussion of findings

Reflexivity and Epistemic Positioning. Throughout this study, epistemological reflexivity was sustained to avoid treating the Global South as a mere site of data extraction. Instead, it was positioned as an epistemic vantage point for interrogating disinformation infrastructures. The convergence across quantitative modeling, symbolic

mapping, and structural genealogy revealed not only isolated patterns but systemic continuities. These continuities are captured in the study's model of indirect epistemic domination, which

posits that the mechanics of colonial indirect rule are reanimated today through digital infrastructures and cultural brokers. Findings challenge liberal-modernist explanations that reduce susceptibility to knowledge or education deficits (cf. Lewandowsky et al., 2017; van der Linden et al., 2020). Regression analysis demonstrated that neither education nor trust in science emerged as a significant predictor. Instead, susceptibility is patterned by epistemic infrastructures historically shaped by colonial governance strategies. In line with Porpora's (2015) critical realist account, these results affirm that social structures exert enduring causal powers that shape how knowledge is filtered, legitimized, and contested.

Religiosity and Media Access. Religiosity emerged as the most salient predictor of disinformation uptake. This reflects colonial strategies that historically leveraged spiritual authorities as intermediaries of control (Mamdani, 1996). Today, religious brokers continue to function as epistemic filters, recoding climate narratives with spiritual and eschatological logics that resonate more deeply than technocratic framings. This finding demonstrates the genealogical continuity between indirect rule and contemporary disinformation mobilization. Contrary to its common celebration as a democratizing force (Castells, 2009), media access amplified vulnerability. This paradox reflects Mamdani's (2018) notion of decentralized despotism: infrastructures that appear to empower also reproduce hierarchical dependencies. Digital platforms, much like colonial intermediaries, serve as conduits that amplify certain voices while marginalizing others, creating algorithmic analogues of colonial visibility regimes (Couldry & Mejias, 2019).

Motif Clusters. The symbolic redundancies in motif pairings revealed that conspiratorial skepticism rarely circulates in isolation. Instead, it embeds within broader anti-Western repertoires, reflecting Bhabha's (1994) discussion of ambivalence in colonial discourse. Similarly, spiritual motifs recast climate disruptions as divine inevitabilities, echoing Asad's (1993) insights on the persistence of religious semiotics in modern political rationalities. These findings confirm the model of indirect epistemic domination, where localization, deflection, and normalization function as interconnected stages of persuasion. These dynamics complicate the promise of fact-checking or technocratic correction. As Foucault (1980) argued, truth circulates within regimes of power/knowledge. Fact-checking assumes a universal epistemic standard, yet in postcolonial contexts, facts are adjudicated within trust networks rooted in religion, custom, and community. The ineffectiveness of "performative trust in science" in this study illustrates that discursive alignment with science does not displace epistemic loyalty to spiritual or communal interlocutors.

The evidence indicates that climate disinformation must be conceptualized not merely as misinformation but as epistemic governance; the structuring of what counts as credible knowledge, who counts as a legitimate speaker, and how narratives achieve resonance. Mechanisms of colonial indirect rule are not dormant; they are mobilized, re-performed, and operationalized in contemporary climate disinformation strategies. Disinformation achieves not only circulation but epistemic legitimacy, rendering fact-checking insufficient and reinforcing the persistence of historically sedimented

vulnerabilities (Porpora, 2015). By surfacing these connections through a reflexive, statistically grounded, and historically informed methodology, this study contributes both an explanatory model and a call for epistemic accountability in climate communication. The findings highlight why vulnerability, authority, and resistance in climate disinformation cannot be understood outside their colonial genealogies, where past logics of authority persist as present architectures of susceptibility.

Study limitations

This study is subject to limitations that shape the interpretation of its findings. First, the relatively small number of countries (n = 11) constrains statistical power and limits the precision of regression estimates, making them exploratory rather than conclusive. The composite Climate Disinformation Susceptibility (CDS) index incorporates elements that are also used as predictors; thus, the associations reported may be inflated and should therefore be viewed as directional indicators of underlying relationships. The reliance on purposive sampling of posts and proprietary survey indices narrows generalizability, particularly beyond the selected national contexts. These constraints do not diminish the central theoretical contribution: demonstrating that the mechanics of colonial indirect rule persist in the mobilization strategies of climate disinformation. Instead, they reveal the need for replication with larger samples, expanded cross-national comparisons, and more disaggregated measures to test the robustness of the proposed model.

Conclusion and policy limitations

By answering the guiding question of how colonial logics persist in shaping the circulation and resonance of climate disinformation, this study demonstrates that susceptibility is not incidental but genealogically conditioned. This study does not suggest that colonial masters have literally returned to orchestrate climate disinformation across their former African colonies. Rather, it advances the claim that contemporary denialist actors: local elites, transnational fossil-fuel interests, and algorithmically empowered influencers, appropriate the infrastructures of colonial indirect rule to make their interventions appear culturally proximate and epistemically authentic. The findings show that disinformation's potency lies not in its volume but in its camouflage, embedding itself in everyday talk so that denialist content is received as indigenous common sense rather

than foreign propaganda. Religiosity and media access emerged as key predictors of susceptibility, illustrating how inherited systems of mediated authority, once institutionalized through colonial intermediaries, continue to shape who is trusted and how narratives circulate. Thus, climate disinformation cannot be countered solely by fact-checking or digital regulation; it must be understood as a form of epistemic governance, scaffolded by colonial precedents that normalized power through intermediaries. What is at stake, therefore, is not only the integrity of climate communication but the struggle for epistemic sovereignty, the right of vulnerable communities to interpret and act upon knowledge free from the colonial blueprints that once governed their subjection and now imperil their survival. To achieve this, policy responses must move beyond technocratic fixes toward interventions that strengthen trust in locally legitimate scientific voices, embed critical climate literacy within community and religious institutions, and demand accountability from digital platforms whose algorithms amplify epistemic vulnerability.

References

Apter, D. E. (1961). *The Political Kingdom in Uganda: A Study in Bureaucratic Nationalism*. Princeton University Press.

Arora, P., & McGuire, C. (2022). *Platform Influencers and the Rise of Algorithmic Cultures*. Routledge.

Ashton, H. (1967). *The Basuto: A social study of traditional and modern Lesotho*. Oxford University Press.

Baker, C. (1997). *State of Emergency: Crisis in Central Africa, Nyasaland 1959–60*. Tauris Academic Studies.

Bhabha, H. K. (1994). *The location of culture*. Routledge.

Brulle, R. J. (2020). Networks of opposition: A structural analysis of U.S. climate change countermovement coalitions. *Sociological Inquiry, 90*(2), 288–322. https://doi.org/10.1111/soin.12333

Castells, M. (2009). *Communication power*. Oxford University Press.

Chanock, M. (1985). *Law, custom, and social order: The colonial experience in Malawi and Zambia*. Cambridge University Press.

Comaroff, J., & Comaroff, J. L. (2012). *Theory from the South: Or, how Euro-America is Evolving toward Africa*. Routledge.

Cornell, S., Berkhout, F., Tuinstra, W., Tàbara, J. D., Jäger, J., Chabay, I., & van Kerkhoff, L. (2013). Opening up knowledge systems for better responses to global environmental change. *Environmental science & policy*, *28*, 60-70. https://doi.org/10.1016/j.envsci.2012.11.008

Crowder, M. (1964). Indirect Rule: French and British Style. *Africa: Journal of the International African Institute*, 34(3), 197–205. https://doi.org/10.2307/1158021

Couldry, N., & Mejias, U. A. (2019). *The costs of connection: How data is colonizing human life and appropriating it for capitalism*. Stanford University Press.

Dunlap, R. E., & McCright, A. M. (2011). Organized climate change denial. In J. S. Dryzek, R. B. Norgaard, & D. Schlosberg (Eds.), *The Oxford Handbook of Climate Change and Society* (pp. 144–160). Oxford University Press.

Epstein, A. L. (1958). *Politics in an Urban African Community*. Manchester University Press.

Essien, E. O. (2025). Climate Change Disinformation on Social Media: A Meta-Synthesis on Epistemic Welfare in the Post-Truth Era. *Social sciences*, *14*(5), 304. https://doi.org/10.3390/socsci14050304

Fanthorpe, R. (2005). On the Limits of Liberal Peace: Chiefs and Democratic Decentralization in Post-war Sierra Leone. *African Affairs*, 105(418), 27–49. https://doi.org/10.1093/afraf/adi091

Farrell, J., McConnell, K., & Brulle, R. J. (2019). Evidence-based strategies to combat climate denial. *Nature Climate Change, 9*(3), 191–195. https://doi.org/10.1038/s41558-018-0368-6

Foucault, M. (1980). *Power/Knowledge: Selected interviews and other writings, 1972–1977* (C. Gordon, Ed.). Pantheon Books.

Fyfe, C. (1962). *A History of Sierra Leone*. Oxford University Press.

Gann, L. H. (1964). *A History of Northern Rhodesia: Early Days to 1953*. Humanities Press.

Gulbrandsen, Ø. (2012). *The State and the Social: State Formation in Botswana and Its Precolonial and Colonial Genealogies*. Berghahn Books.

Hallouch, N. (2018). British indirect rule and Islam in Northern Nigeria (1900-1940). *People: International Journal of Social Sciences*, *4*(2), 249-267. https://dx.doi.org/10.20319/pijss.2018.42.249267

Hughes, A., & Perfect, D. (2006). *A Political History of The Gambia, 1816–1994*. University of Rochester Press.

Lliffe, J. (1979). *A Modern History of Tanganyika*. Cambridge University Press.

Inglehart, R., Haerpfer, C., Moreno, A., Welzel, C., Kizilova, K., Diez-Medrano, J., Puranen, B. (Eds.). (2014). *World Values Survey: Round Six – Country-Pooled Datafile 2010–2014.* JD Systems Institute. https://www.worldvaluessurvey.org

Ladouceur, P. A. (1979). *Chiefs and politicians: The Politics of Regionalism in Northern Ghana*. Longman.

Lewandowsky, S., Ecker, U. K. H., & Cook, J. (2017). Beyond misinformation: Understanding

and coping with the "post-truth" era. *Journal of Applied Research in Memory and Cognition, 6*(4), 353–369. https://doi.org/10.1016/j.jarmac.2017.07.008

Lonsdale, J. (1968). Some origins of nationalism in Tanganyika. *The Journal of African History*, 9(1), 119–146. https://doi.org/10.1017/S0021853700008380

Low, D. A. (1971). *Buganda in Modern History*. University of California Press.

Lugard, F. D. (1922). *The Dual Mandate in British Tropical Africa*. W. Blackwood & Sons.

Maddox, G., & Giblin, J. (Eds.). (2005). *In Search of a Nation: Histories of Authority and Dissidence in Tanzania*. James Currey; Ohio University Press.

Mahadi, A. (1982). The state and the economy: The Sarauta System and its Roles in Shaping the Society and Economy of Kano with Particular Reference to the 19th Century. In B. M. Barkindo (Ed.), *Studies in the History of Kano* (pp. 123–138). Heinemann.

Mahao, N. L. (2007). Colonial rule and the transformation of chieftaincy in Southern Africa: a case study on Lesotho. https://ir.unisa.ac.za/bitstream/handle/10500/447/sj_21_2.pdf?sequence=1&isAllowed=y

Mamdani, M. (1996). *Citizen and subject: Contemporary Africa and the legacy of late colonialism*. Princeton University Press.

Mamdani, M. (2018). *Decolonization and higher education: The case of Makerere University*. https://www.gbpssi.in/admin/coursepack/MPD753Lect02.pdf

Mbembe, A. (2001). *On the Postcolony*. University of California Press.

McCracken, J. (2012). *A History of Malawi, 1859–1966*. James Currey.

Meebelo, H. S. (1971). *Reaction to Colonialism: A Prelude to the Politics of Independence in Northern Zambia, 1893–1939*. Manchester University Press.

Nhamo, G. (2021). Climate Change Denialism in Africa: Trends, Discourses, and Implications. *African Journal of Science, Technology, Innovation and Development, 13*(6), 691–703.

Osei-Tutu, J. (2023). Religious Framings of Climate Change in Ghanaian Public Discourse. *Journal of Religion in Africa, 53*(1–2), 45–67. https://doi.org/10.1163/15700666-12340214

Parsons, N. (1999). *King Khama, Emperor Joe, and the Great White Queen: Victorian Britain through African eyes*. University of Chicago Press.

Perfect, D. (2016). *Historical Dictionary of The Gambia* (5th ed.). Rowman & Littlefield.

Porpora, D. V. (2015). *Reconstructing sociology: The critical realist approach*. Cambridge University Press.

Ranger, T. (1983). The invention of tradition in colonial Africa. In E. Hobsbawm & T. Ranger (Eds.), *The invention of tradition* (pp. 211–262). Cambridge University Press.

Rathbone, R. (2000). *Nkrumah & the Chiefs: The Politics of Chieftaincy in Ghana, 1951–60*. Ohio University Press.

Reid, H. (2016). Indirect Rule: Law and Questionable Ambitions in British East Africa. *Unbound: Revised Legal History & Rare Books*, *9*, 27. https://heinonline.org/HOL/LandingPage?handle=hein.journals/unbound9&div=6&id=&page=

Rodney, W. (1972). *How Europe underdeveloped Africa*. Bogle-L'Ouverture Publications.

Rosenberg, S., Weisfelder, R., & Frisbie, M. (2004). *Historical Dictionary of Lesotho*. Scarecrow Press.

Schapera, I. (2019). *A Handbook of Tswana Law and Custom*. Oxford University Press.

Starbird, K. (2019). Disinformation's spread: Bots, trolls and all of us. *Nature, 571*(7766), 449. https://doi.org/10.1038/d41586-019-02235-x

Vail, L., & White, L. (1989). *Power and the praise poem: Southern African Voices in History*. University of Virginia Press.

van der Linden, S., Leiserowitz, A., Rosenthal, S., & Maibach, E. (2020). Inoculating the public against misinformation about climate change. *Global Challenges, 4*(2), 160–170. https://doi.org/10.1002/gch2.201600008

Wilks, I. (1975). *Asante in the Nineteenth Century: The Structure and Evolution of a Political Order*. Cambridge University Press.

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Appendices

Appendix A: STUDIES REVIEW TABLE

Table A1. Source: Compiled by the author from the various studies reviewed for this research

Region	SN	Country	Colonial Status	Indirect Rule Applied	Colonial Rationale/Mechanism	Publishers	Supporting Studies
West Africa	1	Nigeria	British Colony (1861–1960)	Yes	Used Islamic emirates and traditional monarchs; a prototype for indirect rule through religion and culture.	International Journal of Social Sciences 4(2); Heinemann	Hallouch (2018); Mahadi (1982)
West Africa	2	Ghana	British Colony (Gold Coast)	Yes	The chieftaincy system was integrated, especially in the northern and Asante regions	Ohio State University Press; CUP Archives; Longman	Rathbone (2000); Wilks (1989); Ladouceur (1979)
West Africa	3	Sierra Leone	Crown Colony + Protectorate	Yes	Native chiefs ruled the protectorate; the colony governed directly.	Oxford University Press; African Affairs, 105(418); Africa, 34(3).	Fyfe (1968); Fanthorpe (2006); Crowder (1964).

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West Africa	4	Gambia	British Colony (1889–1965)	Yes	District Commissioners used local headmen and chiefs.	Rowman & Littlefield; Boydell and Brewer; Oxford University Press	Perfect (2016); Hughes & Perfect (2006).
East Africa	5	Kenya	British Colony (1920–1963)	Yes	Indirect rule in African reserves; settlers under direct rule.	Revised Legal History & Rare Books, 9; Princeton University Press	Reid (2016); Mamdani (1996)
East Africa	6	Uganda	British Protectorate (1894–1962)	Yes	Buganda Kingdom model; Kabaka and local kingdoms retained.	University of California Press; Princeton University Press; Routledge	Low (1971); Mamdani (1996), Apter (1961).
East Africa	7	Tanzania	British Mandate (1922–1961)	Yes	Post-German rule; native courts and local chiefs were used.	Cambridge University Press; The Journal of African History 9(1); Ohio University Press	Lliffe (1979); Lonsdale (1968); Maddox & Giblin (2005)
Southern Africa	8	Zambia	British Colony (Northern Rhodesia)	Yes	Tribal authority structures administered rural affairs	Humanities Press; Manchester University Press; Manchester University Press	Gann (1964); Epstein (1958); Meebelo (1971).
Southern Africa	9	Malawi	British Protectorate (Nyasaland)	Yes	Chiefs used in rural taxation and labor control	Boydell & Brewer Ltd.; Tauris Academic Studies;	McCracken (2012); Baker (1997); Vail

						University of Virginia Press	& White (1989).
Southern Africa	10	Botswana	British Protectorate (Bechuanaland)	Yes	Dikgosi (chiefs) kept customary law powers.	Routledge; University of Chicago Press; Berghahn Books	Schapera (2019); Parsons (1999); Gulbrandsen (2012).
Southern Africa	11	Lesotho	British Protectorate (Basutoland)	Yes	Paramount Chief and customary law upheld.	North-West University; Scarecrow Press	Mahao (2007); Rosenberg & Weisfelder (2004)

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APPENDIX B: BOOLEAN KEYWORD SEARCH STRATEGY AND OPERATIONALIZATION

This appendix expands on the methodological details of how Boolean keyword searches were designed, adapted, and implemented across platforms (Facebook, Twitter/X, and YouTube) to harvest climate-related disinformation posts. The Boolean operators AND, OR, and NOT were systematically deployed to ensure that combinations of terms captured both broad discourses and narrower, context-specific frames. Exclusion terms were also used to filter irrelevant noise. Keywords were categorized into three primary frames: spiritual, conspiratorial, and anti-Western/globalist.

Table B1. **Source**: Compiled by the author across platforms (Facebook, Twitter/X, and YouTube)

Frame	Global Keywords	Verified Hashtags / Variants
Spiritual	"God's punishment", "divine wrath", "end times prophecy"	#EndTimes, #GodsWrath, #DivinePunishment
Spiritual	"signs of the end", "prophetic warning", "biblical floods"	#EndTimesProphecy, #BibleProphecy, #JudgmentDay
Conspiratorial	"climate hoax", "UN scam", "green energy lie"	#ClimateHoax, #ClimateScam, #UNScam
Conspiratorial	"global warming fraud", "climate manipulation", "fake science agenda"	#GlobalWarmingHoax, #ClimateFraud, #FakeScience
Conspiratorial	"weather modification", "chemtrails", "geoengineering conspiracy"	#WeatherModification, #Chemtrails, #GeoEngineering
Anti-Western	"Western deception", "false science", "globalist agenda"	#WesternDeception, #ScienceFraud, #GlobalistAgenda
Anti-Western	"colonial climate policy", "imperial hoax", "neo-colonialism in climate"	#NeoColonialism, #ImperialHoax, #ClimateJustice
Anti-Western	"foreign sabotage", "anti-Africa climate narrative", "Western fraud"	#ForeignSabotage, #ClimateJustice, #StopTheFraud

The search lexicon underwent iterative refinement across three pilot phases. Initial keyword sets (N = 120 terms) were deployed across Facebook, Twitter (now X), and YouTube, and noise levels were evaluated. Terms generating high false-positive rates (>40%) were pruned, while underperforming searches (<10 unique hits) were expanded with synonyms, local idiomatic equivalents, and indigenous terminologies circulating in prior climate discourse studies. The culturally adapted hashtag layer was grounded on

platform variants and country-tagged conversations observed during pilot scraping. Through this iterative process, the final schema balanced inclusivity with precision, yielding 200 high-engagement posts across the eleven sampled contexts. Intercoder reliability was calculated at $\kappa = 0.86$, ensuring that coding consistency was not undermined by keyword ambiguity.

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APPENDIX C: DESCRIPTIVE SUMMARY OF DATASETS

This appendix provides descriptive summary statistics for the survey dataset used to derive structural indices across the eleven sampled African countries. Each country is represented by 100 respondents. Values are normalized on a 0–1 scale. The table reports mean, minimum, maximum, and standard deviation for each variable. While a sample size of 100 respondents per country does not provide full national representativeness at the level of large-scale surveys, it is sufficient for the aims of this study. The design is theory-driven and comparative, emphasizing the detection of relational patterns across contexts rather than the estimation of population parameters. The consistent sample size across countries ensures systematic comparability and provides a robust foundation for constructing the Climate Disinformation Susceptibility (CDS) index.

Table C1. Source: Data description was compiled by the author

C	Religiosity_Index_mean	Religiosity_Index_min	Religiosity_Index_max	Religiosity_Index_std	TrustScience_Index_mean	TrustScience_Index_min	TrustScience_Index_max	TrustScience_Index_std	Education_Index_mean	Education_Index_min	Education_Index_max	Education_Index_std	MediaAccess_Index_mean	MediaAccess_Index_min	MediaAccess_Index_max	MediaAccess_Index_std
B	0.6	0.55	0.65	0.03	0.7	0.65	0.75	0.03	0.75	0.7	0.8	0.03	0.65	0.6	0.7	0.03
G	0.69	0.65	0.75	0.03	0.62	0.55	0.7	0.05	0.7	0.65	0.75	0.03	0.7	0.65	0.75	0.03
K	0.75	0.7	0.8	0.03	0.61	0.55	0.68	0.04	0.72	0.65	0.78	0.04	0.75	0.7	0.8	0.03
L	0.63	0.58	0.68	0.03	0.6	0.55	0.65	0.03	0.64	0.6	0.68	0.02	0.63	0.58	0.68	0.03
M	0.7	0.65	0.75	0.03	0.6	0.55	0.65	0.03	0.63	0.58	0.68	0.03	0.63	0.58	0.68	0.03
N	0.85	0.75	0.95	0.06	0.57	0.5	0.65	0.04	0.62	0.55	0.7	0.04	0.62	0.55	0.7	0.04
S	0.7	0.65	0.75	0.03	0.59	0.55	0.65	0.03	0.63	0.58	0.68	0.03	0.63	0.58	0.68	0.03
T	0.74	0.7	0.8	0.03	0.6	0.55	0.65	0.03	0.64	0.6	0.7	0.03	0.65	0.6	0.7	0.03
TG	0.7	0.65	0.75	0.03	0.6	0.55	0.65	0.03	0.63	0.58	0.68	0.03	0.63	0.58	0.68	0.03
U	0.75	0.7	0.8	0.03	0.6	0.55	0.65	0.03	0.64	0.6	0.68	0.02	0.65	0.6	0.7	0.03
Z	0.73	0.68	0.78	0.03	0.6	0.55	0.65	0.03	0.64	0.6	0.68	0.02	0.65	0.6	0.7	0.03

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Country codes are abbreviated as follows: B = Botswana, G = Ghana, K = Kenya, L = Lesotho, M = Malawi, N = Nigeria, S = Sierra Leone, T = Tanzania, TG = The Gambia, U = Uganda, Z = Zambia.. The dataset presented here is author-developed, drawing on secondary information and operationalized for comparative advocacy analysis.

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APPENDIX D: CONSTRUCTION OF THE CLIMATE DISINFORMATION SUSCEPTIBILITY (CDS) INDEX

This appendix provides the technical details for the construction of the Climate Disinformation Susceptibility (CDS) index. The CDS serves as the dependent variable in the regression models and is designed to capture the interaction between primary disinformation exposure (post frequencies) and secondary socio-cultural predictors (religiosity, trust in science, education, and media access). Each country's CDS score reflects standardized and normalized indicators aggregated into a composite index ranging from 0–1.

Formula for CDS:

CDS for country ĭ is computed as:

$$\mathbf{CDS}_{\check{\imath}} = \frac{3_{\text{posts},\check{\imath}} + 3_{\text{religiosity},\check{\imath}} - 3_{\text{science},\check{\imath}} - 3_{\text{education},\check{\imath}} + 3_{\text{media},\check{\imath}}}{5}$$

where Z represents standardized (z-score) values, rescaled to 0–1 for comparability. Positive signs indicate hypothesized amplification effects (religiosity, media access, disinformation post density), while negative signs represent protective effects (education, trust in science).

Table D1. Socio-Cultural Indices and Climate Disinformation Susceptibility

Country	Religiosity	Trust in Science	Education	Media Access	Disinfo Posts	CDS (0–1)
Nigeria	0.86	0.57	0.37	0.61	35	0.71
Kenya	0.72	0.70	0.58	0.76	28	0.71
Ghana	0.70	0.65	0.45	0.68	26	0.69
Tanzania	0.75	0.62	0.50	0.64	22	0.68
Zambia	0.65	0.58	0.48	0.60	20	0.66
Uganda	0.77	0.60	0.46	0.63	21	0.67
Botswana	0.60	0.67	0.52	0.66	12	0.65
Malawi	0.66	0.59	0.44	0.62	13	0.67
The Gambia	0.68	0.63	0.49	0.64	13	0.66
Sierra Leone	0.69	0.61	0.47	0.65	17	0.68
Lesotho	0.64	0.60	0.45	0.61	13	0.67

Source: Compiled by Author

Table D2. Sensitivity Analysis of Climate Disinformation Susceptibility (CDS) Index Predictors

Predictor	Median β	95% CI	Significance (HC3)
Religiosity	0.158	[0.120, 0.192]	$p < 0.05$
Media Access	0.548	[0.500, 0.612]	$p < 0.05$
Trust in Science	-0.363	[-0.410, -0.295]	n.s.
Education	-0.082	[-0.130, -0.040]	n.s.

Note: Results are reported as median coefficients with 95% confidence intervals across alternative scaling specifications. Religiosity and Media Access remain positive and statistically significant across all specifications, while Education and Trust in Science remain consistently non-significant. Results are also robust to alternative normalizations (z-scores vs min–max) and to heteroskedasticity-robust (HC3) and country-clustered standard errors. No influential country was detected (max Cook's D < 1).

Interpretation: The sensitivity analysis demonstrates that the CDS index is robust to alternative scaling and weighting approaches. Religiosity and media access consistently emerge as significant predictors across specifications, while education and trust in science maintain weaker or protective roles. The stability of the index across robustness checks confirms that the reported correlations are not artefacts of scaling choices but reflect structural patterns in the data.

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TABLE OF CONTENTS

Acknowledgements

Thank you to the residents of Majuba Village who shared their time, stories, and knowledge. Gratitude to traditional leaders and community facilitators who helped organise discussions and to interpreters who supported isiXhosa and Sesotho translation. Appreciation to Roots and Climate Action Against Disinformation for their support.

This is a field report written for an international audience. All local terms are explained in plain language when first used. The report balances lived experience with clear evidence so that readers who have not worked in rural South Africa can fully understand the context.

Written by Cherish Vindusa

Peer reviewed by Phil Newell

Edited by Sandra Ata and Rosario Coll

November 2025

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Executive summary

Purpose. This field study examined how residents of Majuba Village in the Eastern Cape understand climate change, where they get information, and how misleading stories take root. The goal was to identify practical ways to communicate climate information that is accurate, trusted, and culturally respectful.

Where and who. Majuba Village lies in Senqu Local Municipality within the Joe Gqabi District. Households rely on rain fed gardens, communal grazing, social grants, and informal work. The main languages are isiXhosa and Sesotho with Hlubi also spoken by some families.

Methods. The study combined a household survey with seven Focus Group Discussions. Groups included women, men, youth, and elders. Research was conducted in English with translation into isiXhosa and Sesotho as needed. Notes were analysed to identify common themes. The approach focused on listening to how people explain environmental change in their own words.

What people know. Residents are deeply aware of change on the land. They spoke about late rains, streams that run dry earlier, reduced grazing, and fruit trees that no longer bear as they did before. Many described the soil as tired and the seasons as unreliable.

How people explain it. Scientific language such as greenhouse gases is not commonly used. Instead, people often link drought and storms to social and spiritual causes. Explanations included ancestral warning, God's anger, or witchcraft during times of conflict. These explanations are not lies. They are moral frameworks that communities use to make sense of misfortune when trusted scientific information is missing or hard to access.

Cultural responses. Two practices stood out. First, the rainmaking ritual where women climb the mountain to pray and sing for rain. Second, the Iphini ritual where one village symbolically steals the wooden pap stick from another and races it to the chief's homestead while the other village gives chase. If the runners arrive first, people believe rain will come. Both practices express a local view that social harmony and environmental harmony are linked.

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Disinformation pathways. Misleading climate stories travel through everyday spaces. Word of mouth at churches, funerals, and stokvel meetings. Family WhatsApp groups that circulate voice notes and predictions. Political gatherings where drought is framed through party loyalty. The absence of regular, local, trusted climate content makes it easier for rumours to fill the gap.

Why radio matters. In rural South Africa radio is the most reliable mass medium. It is free to listen once you own a receiver. A small radio can run for months on batteries. Many households do not have Wi Fi and mobile data is costly relative to low incomes. For these reasons radio reaches more people more often than internet based platforms. National public stations such as Umhlobo Wenene FM and Lesedi FM have wide reach, but they
cannot serve every dialect or local issue. Community radio is close to the ground and can speak in the exact languages and dialects that people use at home, including Hlubi. This makes it the most practical tool for climate education in Majuba and similar villages.

What is at stake? Repeated dry spells and heat affect cattle condition, garden yields, and household water. When rains come late, families buy more food, sell livestock at lower value, or seek temporary work away from home. Clear, trusted climate information can help households adjust planting calendars, protect livestock, and store water better. Without it, people are more vulnerable to both climate shocks and misleading claims.

What will work? Communication should be local, in isiXhosa, Sesotho, and Hlubi where relevant. It should be dialogic which means two way, using formats people enjoy. Radio mini dramas, call-ins with trained facilitators, short talks at livestock dip tanks, and simple posters that show planting months and pests are all suitable. Training local presenters and youth facilitators to verify information and explain climate in plain words will reduce the space for rumours. Chiefs, councillors, teachers, and church leaders can carry the same messages so that people hear consistent guidance from trusted voices.

Main recommendations

1. Establish or strengthen a community radio station for the Senqu area that includes regular climate segments in isiXhosa, Sesotho, and Hlubi.
2. Train a small team of local climate facilitators including women and youth to appear on radio, visit schools, attend dip tank days, and host community dialogues.

3. Produce simple visual materials such as a seasonal planting calendar and a livestock heat stress tip sheet that match local conditions.
4. Run a story based radio mini series that follows familiar characters and ends each episode with one practical action.
5. Create a feedback loop where listeners can submit questions by SMS or through school drop boxes and receive answers weekly on air.
6. Coordinate messages across chiefs, councillors, teachers, and church leaders so that households hear the same advice from multiple trusted sources.

Methodology

Research purpose

The research aimed to understand how people in Majuba Village experience and explain climate change, where they get information, and how inaccurate or misleading stories circulate. The study also sought to identify practical ways to make climate communication more effective, inclusive, and trusted at community level.

Design

A mixed-methods design was used. This means both numbers and stories were collected and analysed together to give a fuller picture. Quantitative data came from household surveys, and qualitative insights came from Focus Group Discussions and key informant interviews.

Sampling

The research planned for 100 survey participants but achieved 74 complete responses due to travel distance and availability of participants. Respondents were aged between 15 and over 65 and included men and women from all sections of Majuba. Seven Focus Group Discussions were held, each with 10–12 participants selected by a simple number-draw method to ensure fairness and diversity.

Focus Group Discussions

Each FGD lasted about 90 minutes and followed a 12-question guide translated orally into isiXhosa and Sesotho. The guide covered topics such as local weather changes, beliefs

about their causes, sources of information, and whom people trust most. Two facilitators

managed each session one leading and the other taking detailed notes. With participants' consent, discussions were video recorded and later transcribed.

The FGD method allows people to build on each other's thoughts, reveal shared cultural reasoning, and surface local metaphors that might not appear in individual interviews. The approach is widely used in rural development research because it respects oral tradition and group knowledge.

Key informant interviews

Additional short interviews were conducted with a traditional leader, two health workers, a teacher, and a local councillor. These interviews provided background on community communication patterns, leadership roles, and existing environmental activities.

Data processing and analysis

Survey responses were entered into a spreadsheet and analysed for frequencies and patterns for example, how many people had heard the term "climate change" and from which sources. FGD and interview transcripts were coded for recurring themes such as spiritual interpretation, institutional mistrust, and disinformation channels. Findings from both methods were then compared and integrated.

Ethics and consent

All participants were informed about the purpose of the study and that participation was voluntary. Permission was obtained from community leaders before fieldwork began. No names were taken.

Limitations

Some participants were unavailable during planting season, and a few older respondents preferred to speak only in their home dialects, which required extra translation time. Despite these constraints, the combination of surveys and FGDs produced a reliable and representative picture of community perceptions.

Theme 1. Confusion between climate and weather

Many residents described immediate weather events such as heat waves, sudden storms, or heavy rainfall rather than long-term patterns. When asked what climate change meant, common phrases included "the weather is angry," "the sun is too hot," and "the seasons have lost their order."

These expressions reveal that people observe environmental shifts daily but use local language to describe them. The words “angry” or “mood” suggest a belief that nature has personality or moral intent. For Majuba residents, weather is relational; it reacts to how people behave toward each other and toward the land.

When asked for examples, participants mentioned goats miscarrying after sudden temperature changes, fruit trees that no longer produce, and streams drying earlier in the year. This shows a lived awareness of climate variability even if the terminology is not scientific.

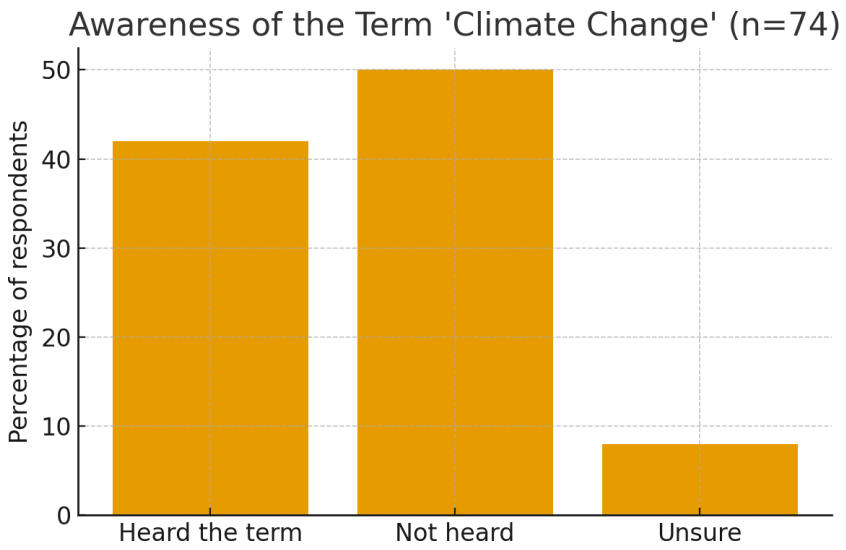

Figure 1. Awareness of the term “climate change” among survey participants (n = 74). Only 42 percent had heard the term before; half had not.

Theme 2. Spiritual and supernatural framings

Many participants framed environmental changes through spirituality or traditional belief. Some said drought was punishment from God or the ancestors; others spoke of witchcraft between families. Such interpretations were particularly strong when families experienced conflict or loss.

These explanations are not acts of misinformation. They are moral frameworks built on generations of experience. In rural South Africa, where formal environmental education rarely reaches households, spirituality provides meaning and comfort. According to

national surveys by the Human Sciences Research Council, more than one-third of rural respondents still attribute misfortune to witchcraft or ancestral anger.

Understanding this worldview is essential for communicators. It shows that factual climate messages must coexist respectfully with cultural belief systems rather than try to replace them.

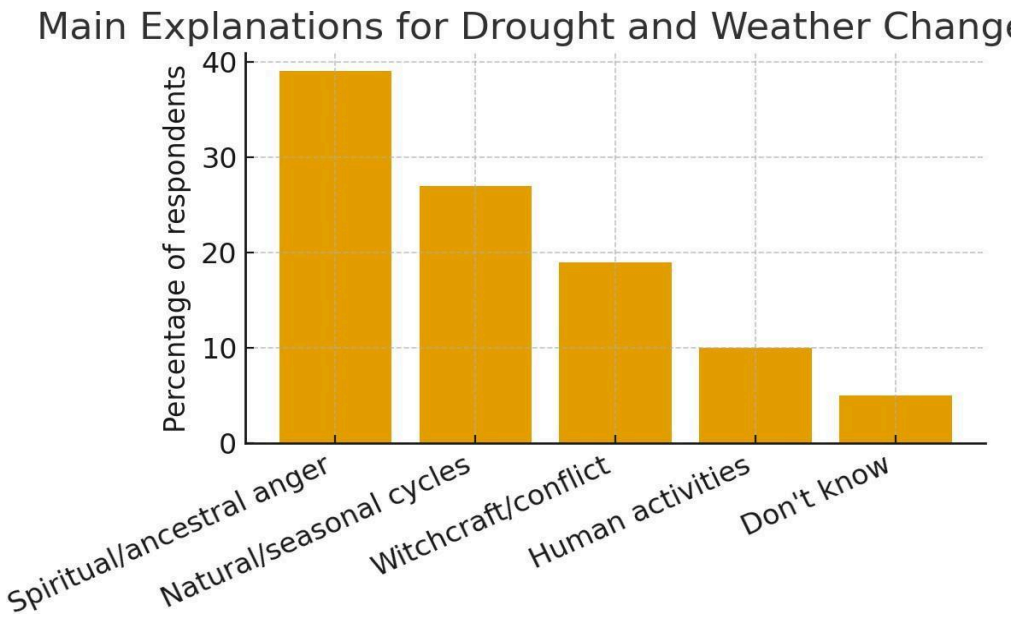

Figure 2. How respondents explained environmental change. Spiritual and moral interpretations outweigh scientific ones

Theme 3. Environmental memory and loss

Older participants spoke with deep sadness about visible environmental decline. Many said, “The soil is tired” or “The stream is sick.” They compared today’s landscape to their childhood memories when rivers flowed longer, birds were more plentiful, and gardens flourished with maize, peas, and pumpkins.

When asked how they knew things had changed, participants pointed to specific indicators: fruit trees flowering later, tadpoles disappearing, and grazing fields turning bare before mid-summer. These detailed observations show a community that closely monitors its environment even without formal measurement tools.

Theme 4. Institutional mistrust and media silence

Participants expressed strong mistrust of local government and said they had never received any municipal information about climate or drought. A few had heard news about floods in other provinces but none explaining local droughts.

Radio was identified as the main information source, yet residents said that national stations such as Umhlobo Wenene FM (isiXhosa) and Lesedi FM (Sesotho) rarely talk about climate issues in a way that connects to their daily lives. These stations are respected but are national in scope and broadcast mainly urban content. Their headquarters are far from the Joe Gqabi District, and presenters may not know local dialects such as Hlubi.

Without regular, relatable information, people turn to word of mouth and local leaders for explanations, which leaves space for rumours and misconceptions to grow.

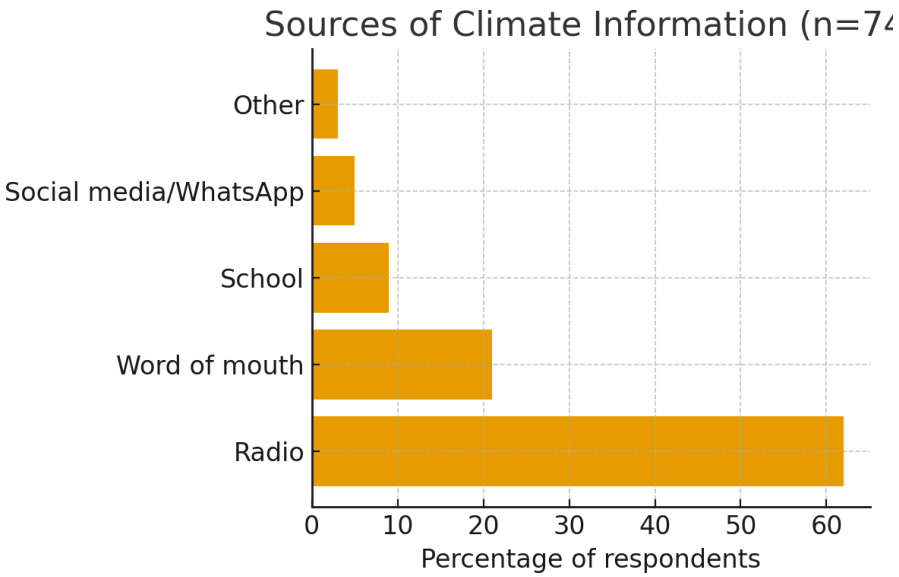

Figure 3. Main sources of climate information. Radio dominates as the key channel of awareness.

Theme 5. Cultural coping mechanisms and ritual solutions

Two traditional practices were discussed in nearly every focus group: the women's rainmaking ritual and the Iphini ritual.

When drought persists, women in the community climb the nearby mountain to pray and sing for rain. Men do not participate; the act is led exclusively by women because they are seen as life givers, symbolising fertility and renewal. The ritual strengthens unity between

community members and the ancestors, expressing the belief that social harmony restores environmental balance.

Linked to this is the Iphini ritual, named after the wooden stick used for stirring pap, a thick maize porridge. During severe drought, one village symbolically steals the Iphini from another and runs with it to the chief's homestead while the other village chases them. If the runners reach the chief first, it is said the drought will break and rain will fall; if they are caught, the drought may continue.

For outside readers, these rituals may appear symbolic, but in Majuba they are social actions that restore moral order. They show that people use collective storytelling and ceremony to respond to crisis.

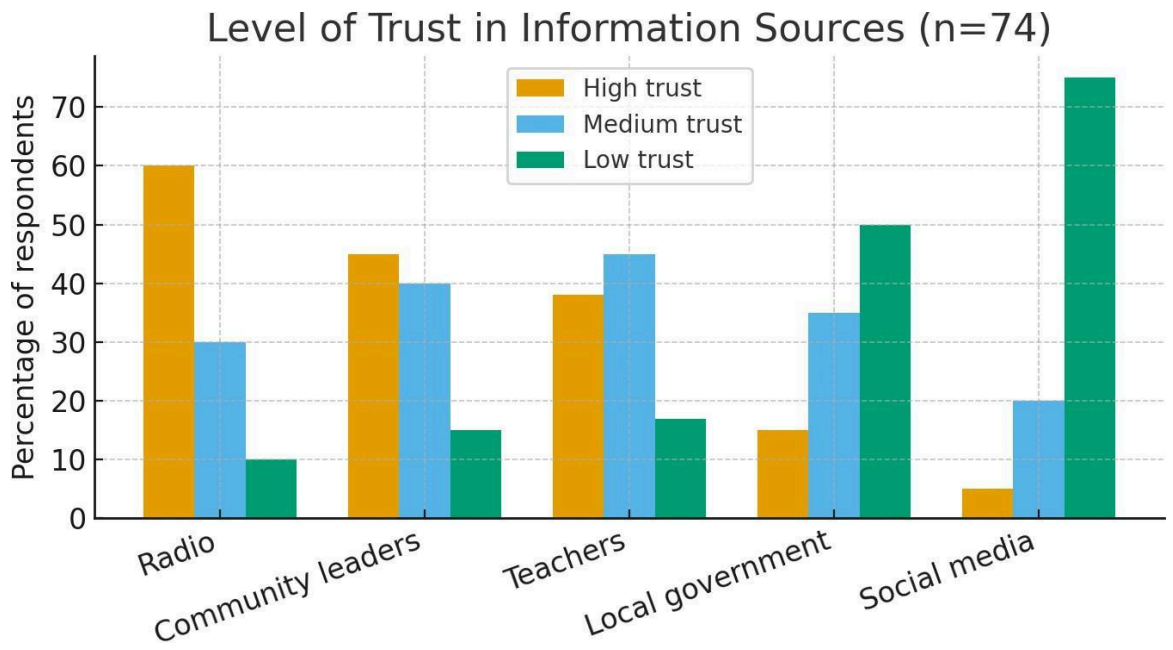

Figure 4. Trust levels in different information sources. Radio and community leaders enjoy the highest credibility.

Theme 6. Disinformation pathways

The study found several ways that climate-related misinformation spreads:

- **Word of mouth** at churches, funerals, and stokvel gatherings.
- **WhatsApp and Facebook** messages predicting "government-made weather" or claiming that rain was stolen by other provinces.

The absence of clear local information allows these ideas to circulate widely. Similar patterns have been documented nationally by the Centre for Analytics and Behavioural Change (CABC, 2023), which notes that rural audiences are highly exposed to misinformation when internet access is limited and local journalism is weak.

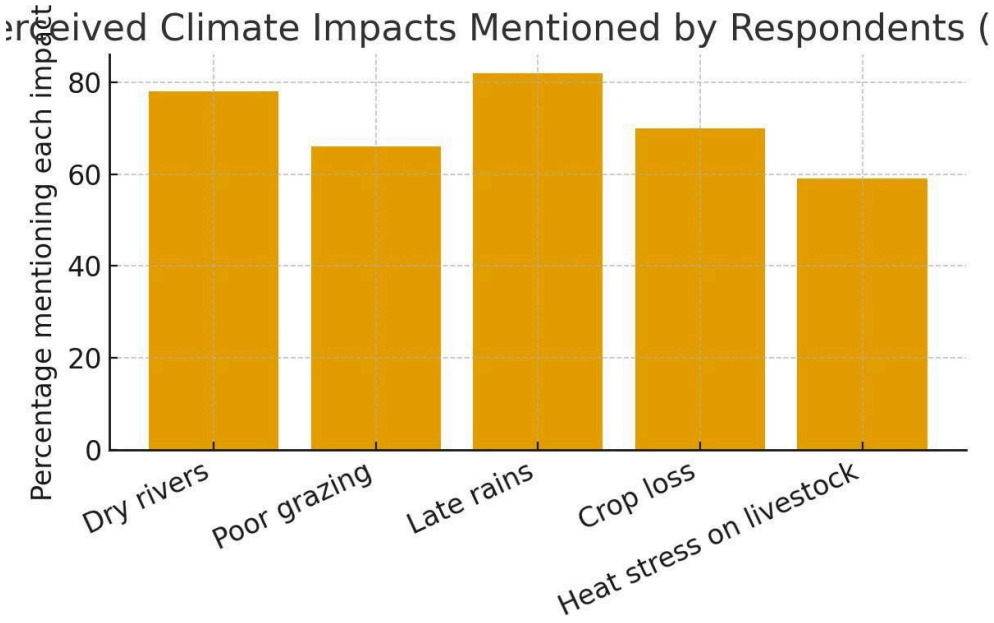

Figure 5. Commonly observed climate impacts mentioned by Majuba residents.

Focus Group Narratives

The Focus Group Discussions (FGDs) provided detailed, human accounts of how Majuba residents interpret and live through climate change. Each group discussion lasted about ninety minutes and was guided by twelve open questions. The process created space for participants to debate, question, and reflect on their own experiences.

Structure and Participation

Groups were held in the community hall over two consecutive days. Each included ten to twelve participants representing women, men, youth, and elders. Discussions were translated between English, isiXhosa, and Sesotho as needed. Women were especially active in the sessions that dealt with rainfall, agriculture, and spirituality, often connecting environmental issues to household responsibilities.

After each question round, participants chose one spokesperson to summarise their group's views. The rest of the room could then respond, leading to a lively dialogue. This method encouraged inclusion and let the researcher observe how ideas spread and how consensus formed.

Common Storylines

Across all groups, a consistent narrative emerged: environmental change is real, visible, and deeply felt. Participants spoke of unreliable rains, stronger heat, and soil that "no longer listens." Yet very few used the term *climate change*. Instead, they described what they saw and connected it to social or spiritual causes.

One woman said:

"When the river no longer flows, it means we have forgotten the ways of our mothers. We must go up the mountain and sing again."

A middle-aged man linked climate shifts to global behaviour:

"The people in cities are polluting the sky. That is why it burns the earth. We pay the price here."

A 78-year-old traditional leader provided a remarkably accurate scientific explanation:

"The seasons have changed. That is climate change. We pollute mother earth and that pollution goes up and heats the sky. It melts the ice at the poles and makes the sea rise. The same heat brings floods and fires."

His statement shows that accurate understanding can exist even without formal education when people listen to multiple information sources.

Emotional Tone and Memory

Elders expressed nostalgia and grief for the environment they grew up in:

"We had fruit trees everywhere. We swam in clear water. Now the trees are gone, and even the horses refuse to drink from the stream."

Such reflections were often followed by silence or murmurs of agreement, revealing that climate impacts are experienced not only materially but emotionally. Many participants

used words such as “the land is tired” or “the soil is old,” which personify nature and signal a deep relationship with place.

Belief and Interpretation

While a few participants referenced scientific or media sources, most framed the issue through belief systems. Several stories linked drought to witchcraft between families or villages. One man said a neighbour’s field failed because “he was bewitched for boasting about his harvest.” Others cited the Bible, describing floods as signs of the “end times.”

These interpretations show how social tensions and spiritual frameworks shape environmental understanding. For communicators, this highlights the need to start from within these belief systems rather than outside them.

Knowledge Gaps and Information Sources

When asked where they heard about climate change, only two participants mentioned school lessons. The majority cited radio news, but they recalled hearing about distant events like Cape Town’s “Day Zero” water crisis rather than local advice. Others said they rely on community leaders, church announcements, or phone messages shared by relatives.

Young participants reported using WhatsApp and Facebook, but only when they had data or Wi-Fi access in town. As one youth explained, “Data is expensive; we use it for chatting, not for climate.” This confirms that cost barriers limit digital learning.

The Role of Women in Rainmaking

Women described their role in the mountain rainmaking ritual with pride. They emphasised that only women are allowed to go because women bring life, just like rain brings life. One older participant explained that when the drought is severe, the women climb before sunrise, carrying traditional cloth and singing ancestral hymns. The men stay behind to prepare the village. After the ritual, everyone gathers at the chief’s kraal for a prayer of unity.

The Iphini Ritual

Several groups recounted the *Iphini* ritual. Villagers laughed as they explained how one community “steals” the wooden cooking stick from another. The chase to the chief’s

homestead is both competition and collaboration: whichever side wins determines whether the rains will come. Participants said this event strengthens relationships between villages and provides relief through humour and shared purpose during hard times.

To outside observers, the ritual may seem playful, but within the community it symbolises moral cleansing. Reconciliation between villages is believed to restore the balance of nature.

Signs of Change

Beyond rituals and beliefs, participants offered concrete observations. Many said winter is warmer, rivers dry sooner, and certain birds no longer migrate through the valley. A young man noted that snakes appear earlier in summer, which elders confirmed as unusual.
Farmers said they now plant later to avoid losing seeds to unexpected frost.

Implications from Narratives

The focus groups show that Majuba residents already possess rich environmental knowledge but lack trusted, locally relevant information. They draw on spiritual, experiential, and communal sources to interpret what they see. Strengthening local communication systems, especially community radio, could bridge this gap by blending scientific information with cultural context.

Implications for Communication

The findings from Majuba Village reveal that communication around climate change must start where people are within their languages, belief systems, and daily realities. Information cannot simply be transmitted from scientists to communities; it has to be translated into the cultural and economic terms people live by.

Why Radio Matters

In rural South Africa, radio is the most widely used and trusted medium. A simple radio receiver costs little and can operate for months on two batteries. Many households have no Wi-Fi and very limited internet coverage. Data and airtime are among the most expensive in the world relative to income. The International Telecommunication Union

(2023) reports that one gigabyte of mobile data can consume up to 5 percent of a

low-income household's monthly income. Because of this, families prioritise calls and messaging over internet browsing. In contrast, radio is free once you own it.

People listen while cooking, herding, or travelling, which means radio accompanies daily life. It is also inclusive: listeners do not need literacy, electricity, or smartphones. For these reasons, any national or regional climate-communication plan should treat radio as core infrastructure, not as an optional supplement.

National vs. Community Radio

South Africa has a three-tier radio system: national public service, commercial, and community.

- **Umhlobo Wenene FM** (broadcast in isiXhosa) and Lesedi FM (broadcast in Sesotho) are national public stations of the South African Broadcasting Corporation. They reach millions across the country but their programmes are produced in urban centres such as Johannesburg and Gqeberha. As a result, they cannot fully reflect the dialects, customs, or challenges of remote areas like Majuba.
- **Community radio**, by contrast, operates within a small broadcast radius. It is locally owned and often volunteer-run, using the languages, humour, and idioms of the region. Community presenters are neighbours rather than distant professionals, which builds credibility and trust.

Community radio is therefore the most practical medium for climate education in Majuba. It can include local dialects such as Hlubi, a language closely related to isiXhosa and isiZulu but distinct enough that many speakers feel excluded from national broadcasts.

Why Local Languages and Dialects Matter

Language carries a worldview. When information is delivered in a dialect people use at home, it feels familiar and trustworthy. A single isiXhosa word can have different meanings across the Eastern Cape; local presenters instinctively understand these nuances. Including Hlubi, for example, would acknowledge a group that is often invisible in national programming and increase inclusiveness in public information campaigns.

The Case for Localised Climate Radio

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Community radio stations understand their listeners' context. They know when rivers dry, which roads become impassable, and what crops are failing. They can schedule programmes to match local routines for example, a short climate bulletin after early-morning church news or before evening farming updates.

Possible broadcast formats include:

- **Call-in dialogues** where farmers, women's groups, and youth ask questions directly to trained facilitators.
- **Radio mini-dramas** that use storytelling to teach climate adaptation in entertaining ways.
- **Weather diaries** where elders share traditional indicators such as bird migration or early flowering.
- **Community reports** giving weekly updates on water supply, grazing, and planting advice.

Because community radio staff are locally rooted, they can quickly correct rumours and misinformation. For example, if a false message spreads on WhatsApp claiming "government controls rain," a presenter can invite a local agricultural officer to explain the science in familiar terms.

Building Trust and Countering Disinformation

The research shows that misinformation fills the space left by silence. Regular, consistent, and friendly communication builds a layer of protection against false claims. Trust depends less on high technology and more on *who* delivers the message. Chiefs, councillors, teachers, pastors, and especially women's groups are all respected voices within the community. Partnering them with trained climate facilitators ensures that accurate information is repeated in multiple settings.

Integrating Culture and Science

Communication should not dismiss traditional beliefs but connect them to practical action. For instance, the women's rainmaking ritual could be broadcast as a cultural story followed by a short scientific explanation about rainfall cycles. This approach respects heritage while encouraging critical thinking.

In Majuba, people are already observing environmental patterns with great accuracy; effective communication helps them link these observations to global processes.

Recommendations

The lessons from Majuba Village point to clear, practical steps that can improve how climate information is shared, understood, and trusted in rural South Africa. These recommendations are designed to be realistic for communities with limited resources and to align with the goals of combatting climate disinformation.

1. Establish a Regional Community Radio Station

A dedicated community radio station for the Joe Gqabi area should be created or strengthened to serve Majuba and surrounding villages. It should broadcast daily or weekly programmes on climate change, weather, agriculture, and sustainable practices in **isiXhosa, Sesotho, and Hlubi**.

Purpose:

- Provide locally relevant and accurate climate information.
- Translate scientific concepts into everyday language and stories.
- Counter misinformation by addressing rumours directly on air.

Practical actions:

- Recruit and train local presenters who already have community trust.
- Involve schools, women's groups, and youth clubs as content contributors.
- Partner with agricultural officers and educators for verified information.

2. Train Local Climate Facilitators

Identify and train a small group of local climate facilitators, especially women and youth, who can act as interpreters between scientific and community knowledge systems.

Their role:

- Host short radio segments and participate in call-in programmes.

- Lead school and church dialogues about climate adaptation.

- Visit livestock dip tanks and community gardens to give practical advice.

Training should cover basic climate science, local storytelling methods, and misinformation spotting. Facilitators can work part-time and be supported by small stipends or partnerships with local NGOs.

3. Use Storytelling and Drama

People learn best through stories that reflect their own lives. A radio mini-drama series can follow characters who face drought, make decisions about planting, and learn through experience.

Example:

A fictional family navigates a changing climate, showing what actions help and which make things worse. Each episode ends with a short explanation of the science behind the story and an invitation for listeners to send their questions.

This method humanises climate education and avoids technical jargon.

4. Create Visual and Print Materials

Simple posters and leaflets in isiXhosa, Sesotho, and Hlubi can reinforce radio messages. Visual materials are useful for schools, churches, and municipal offices.

Examples include:

- **Seasonal planting calendars** that show when rains typically start and what pests appear after hot winters.
- **Livestock care tip sheets** on watering, shading, and disease prevention during heat waves.
- **Household water conservation guides**.

These materials should use pictures more than text so they are accessible to everyone, regardless of literacy level.

5. Build a Feedback Mechanism

Set up an easy way for residents to ask questions and give feedback about climate information. In Majuba, many people own basic phones but not smartphones. Therefore, SMS or call-in systems work better than online forms.

Schools can also serve as collection points for written questions that are later answered during radio broadcasts. This two-way approach ensures that communication remains interactive rather than one-directional.

6. Coordinate Trusted Messengers

Climate communication is strongest when multiple respected voices repeat the same message. Chiefs, councillors, teachers, and pastors should be engaged as partners. Local government offices can provide up-to-date forecasts and advisories that these leaders share during meetings or services.

Training sessions for leaders can include how to recognise and correct misinformation without shaming those who believe it.

7. Encourage National Support for Community Media

National policy should recognise that community radio is public infrastructure. Funding and technical support are needed to sustain local stations, maintain equipment, and pay minimal stipends to presenters. Without stable funding, rural stations risk closure, which deepens information inequality.

8. Integrate Culture into Communication Strategy

Respect for local traditions increases community buy-in. For example:

- Link modern weather forecasting with ancestral practices such as observing animal behaviour or tree flowering.
- Broadcast interviews with elders explaining traditional ecological knowledge alongside youth who discuss new methods.
- Frame environmental care as both cultural duty and scientific necessity.

This integration turns communication into cultural renewal rather than external instruction.

9. Support Ongoing Research and Monitoring

Majuba's situation should not be treated as unique. Similar studies should be conducted in other villages to compare communication barriers and track improvement. Annual follow-up surveys can measure changes in awareness,

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Researcher's reflections

During the time of fieldwork in Majuba Village, I saw clearly how the absence of regular, reliable and simple climate communication leaves people vulnerable to confusion and fear. Climate change is not an abstract issue here; it touches water, food, livestock, and community relationships every day. Yet information about it arrives from faraway sources that feel disconnected from village life.

Observations from the Field

I noticed that discussions about climate change are often confined to urban or academic settings. Scientists, government officials, and NGOs talk about it in conferences or reports, but those conversations rarely reach rural households. When residents in Majuba hear about global warming on the radio, it sounds like something happening elsewhere, not something shaping their own rainfall and crops.

Most people learn about the environment through everyday experiences by watching rivers, feeling the wind, or noticing when certain birds return. Their observations are accurate but their explanations are shaped by culture, spirituality, and inherited wisdom. Without consistent access to verified information, these explanations become the main interpretive lens. This does not make them wrong; it makes them incomplete.

The Silence of Official Communication

Throughout the research, I found no evidence of systematic climate awareness campaigns from local government or provincial departments. The municipality has no ongoing climate-education programme, and schools treat the topic only briefly in science lessons. Public service radio stations provide some national coverage, but their content rarely links to rural realities.

When the national news reports drought in Cape Town or floods in KwaZulu-Natal, rural listeners do not hear what that means for them in Senqu. This lack of localisation creates distance between policy and lived experience. It also feeds mistrust people assume that if authorities are silent, they are indifferent.

The Cost of Connectivity

Digital exclusion is another barrier. Many households in Majuba own basic phones, not smartphones. Data costs remain extremely high by global standards. People explained that they buy airtime mainly for voice calls and text messages. Several said they have never used Wi-Fi and do not fully understand what it is. As one youth commented, "We use phones, but data is for rich people."

Because of this, radio is the only consistent channel. It is cheap, portable, and free to listen to. You buy batteries twice a year and you are connected. Radio is a shared experience families listen to together in the evenings or during work in the fields. It keeps people informed about funerals, elections, and music; it can do the same for climate adaptation.

Lessons About Disinformation

When reliable information is scarce, rumours become explanations. Disinformation in Majuba does not appear as organised propaganda but as everyday stories that fill the vacuum of knowledge. Some claim that government programmes are stealing rain or that droughts are punishment for political disobedience. These narratives are powerful because they speak to real frustrations with inequality and governance.

Countering disinformation, therefore, is not only a technical task of correcting facts; it is a social task of rebuilding trust. People believe those who speak their language, understand their customs, and share their struggles. Communication efforts that ignore this reality risk sounding like outsiders lecturing from afar.

The Gendered Dimensions

Women play central roles in both community life and spiritual response to environmental stress. Their leadership in the mountain rainmaking ritual demonstrates that cultural authority and environmental stewardship are intertwined. Any communication strategy should acknowledge women not only as beneficiaries but as knowledge holders and messengers. Empowering women to host radio segments or lead school clubs connects climate action with the community's moral core.

Personal Reflection

As a researcher, listening to the community challenged me to think differently about knowledge. I realised that academic definitions of climate change capture only one form

of truth. The other truths are held in lived experience through stories, songs, and rituals are equally important for motivating action.

Majuba reminded me that effective communication is not about translating English into isiXhosa or Sesotho; it is about translating unfamiliar ideas into familiar experiences. When people see that climate science aligns with what they already observe, understanding becomes trust, and trust becomes action.

Conclusion

Majuba Village offers a clear view of how global climate change is experienced and interpreted at the community level. The residents do not debate whether the climate is changing; they live with the evidence every season. What differs is how they explain it and where they turn for guidance.

This study shows that knowledge alone does not create understanding. People need messages that speak in their language, recognise their beliefs, and respond to their immediate conditions. When these needs are not met, spiritual and social explanations step in to fill the gap. Those explanations give meaning but can also open the door to misinformation.

Reliable communication must therefore be local, dialogic, and culturally grounded. It must combine scientific accuracy with empathy for how people experience uncertainty and loss. The community already holds valuable environmental knowledge through observation, farming experience, and oral tradition. Linking that knowledge to verified information can make adaptation strategies more practical and trusted.

Community radio stands out as the most realistic and sustainable vehicle for this work. It is free to access, familiar to every household, and capable of broadcasting in the dialects people use daily. A small, well-supported station for the Joe Gqabi area could become a hub for both education and accountability, turning passive listening into active participation.

Majuba also demonstrates that countering disinformation is not simply about fact-checking; it is about building consistent relationships of trust. When people hear clear and respectful explanations from voices they know, false claims lose power. Chiefs,

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teachers, church leaders, and especially women can serve as bridges between tradition and science.

In the long term, investing in community-based communication is an investment in resilience. Climate adaptation begins with understanding, and understanding begins with conversation. The people of Majuba have already shown willingness to talk, question, and learn; what they need is the means to keep that conversation alive.

Knowledge is power. Without knowledge it is very easy for communities to be misinformed and that is very dangerous

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References

Broadcast Research Council of South Africa (BRC). 2023. *Radio Audience Measurement Survey (RAMS) Data Summary.* Johannesburg.

Centre for Analytics and Behavioural Change (CABC). 2023. *Misinformation and Disinformation Trends in South Africa.* University of Cape Town.

Department of Agriculture, Eastern Cape. 2019. *Provincial Drought Impact Assessment Report.* Bhisho.

Human Sciences Research Council (HSRC). 2022. *South African Social Attitudes Survey.* Pretoria.

International Telecommunication Union (ITU). 2023. *Measuring Digital Development: Facts and Figures 2023.* Geneva.

Research ICT Africa. 2022. *The State of Data Affordability in Sub-Saharan Africa.*

Cape Town.

Media Monitoring Africa. 2023. *Climate in the Media: Coverage Analysis.*

Johannesburg.

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Disinformation in Media Coverage of the 2014 and 2022 Oil Spills in the Cuninico Community

TABLE OF CONTENTS

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Abstract

This study analyzes the thematic content of the national coverage of three traditional digital media outlets and three alternative ones regarding the oil spills that occurred in the locality of Cuninico, territory of the Amazonian indigenous people, Kukama Kukamiria. It focuses on digital news material from 2014 to 2024. The analysis was conducted using a content observation sheet with eight categories. The objective of the analysis is to identify opposing narratives that may show perceptual disparity regarding the event, whether in favor of the indigenous peoples, the oil company, or even neutral. In this way, it is observed how such narratives or the omission of information play a role in climate disinformation concerning the Amazon.

It was evident that traditional media focus on reproducing official discourses, while alternative media provide greater coverage both in quantity and in depth regarding the event. The main discourse found was that of guilt imposed by Petroperú and state officials on the indigenous communities regarding responsibility for the 2022 spill. In this way, two types of disinformation were validated: omission of information and distraction; both of which largely contribute to the deterioration of perception towards the indigenous communities and the Amazon.

Introduction

Climate disinformation and the fight against climate change

Before discussing climate disinformation, it's necessary to define what we mean by it. According to the Climate Action Against Disinformation Coalition (CAAD) climate disinformation refers to "false or misleading content that undermines the existence or impacts of climate change, the undeniable human influence on it, and the urgent need for action in line with the IPCC scientific consensus and the goals of the Paris Agreement." A key point to highlight is that much of this content is produced intentionally and for profit. It also includes distorting scientific data to generate distrust in climate science and related fields. Additionally, it covers deceptive actions that claim to support climate goals but ultimately have the opposite effect by contributing to global warming.
This type of content represents a major threat to climate action, as it delays the development of policies aligned with the Paris Agreement. Social media has amplified climate denial on a massive scale, since information can be shared quickly without verifying its accuracy. Financial incentives also exist for spreading this misleading content online. Proposed solutions include promoting transparency, fostering global cooperation to address the issue, and supporting political initiatives designed to combat climate disinformation (CAAD, n.d.).

Case study

This study seeks to examine how Peruvian traditional and alternative media covered the 2014 and 2022 oil spills in the Cuninico ravine, affecting the Kukama Kukamiria people, and how such coverage reflects patterns of climate disinformation or omission of information. In this context, the section will address the intersectionality between climate disinformation and Indigenous peoples to highlight the relevance of this topic. Subsequently, the possible implications for the Kukama Kukamiria community will be discussed, considering the role of disinformation in shaping public perception and policy responses in the present case study.

The media coverage in Indigenous populations

It is important to mention that the media respond to a media agenda, which means they select the information they will present to the public according to their topics of interest. In this way, the media preemptively choose the topics that are relevant to the public and

that align with their stance. It can therefore be stated that the media shape their readers' perception of the world through their news (Valverde, 2024). The danger lies in the fact that the information provided by the media is considered absolute truth, which, in this case, affects the urban population's perception of the Amazonian Indigenous population. One example that highlights the misrepresentation of Indigenous communities in media coverage is the Baguazo socio-environmental conflict in 2009, in which the dominant state discourse portrayed Indigenous peoples as "against the country's development" (based on a primary-export model), thereby positioning them in apparent conflict with the interests of the majority population. This occurred without a thorough analysis of the state's unmet obligations, which prioritized foreign investment to carry out extractive activities on Indigenous territory (Valverde, 2024).

This form of media representation not only distorts socio-environmental conflicts but also relies on stereotypes that affect the general perception of Indigenous populations. News coverage involving these groups has long been shaped by prejudice, portraying them as "savages" or as "something from the past" (Barreiro et al., 2019). Thus, the media play a crucial role in either reinforcing these stereotypes or, alternatively, contributing to their deconstruction.

Such patterns are also observed in other contexts. Ivars (2021) conducted research analyzing the stance of the Argentine newspaper *Río Negro* on unconventional hydrocarbon extraction and the social conflicts arising from the events in Allen in 2015. The study concluded that the newspaper's position helped maintain established social structures regarding economic and political realities. Similarly, from a perspective closer to the present case, Orellana (2022) examines the media coverage by Peruvian newspapers of the Repsol oil spill in Ventanilla in 2022. The study found that traditional newspapers such as *El Comercio*, *La República*, *RPP*, and *Trome* adopted a sensationalist approach, exaggerating the events and emphasizing the irreversible catastrophe involved.

The present research draws on the conclusions of Orellana's (2022) analysis and incorporates the additional variable that this is not only an environmental disaster, but one that has affected the community of Cuninico, which is composed of the Indigenous Kukama Kukamiria population. In this context, there is a greater likelihood of climate disinformation, which could reinforce a negative image of Amazonian Indigenous peoples and hinder their struggle to defend their right to life within an oppressive system. On this point, AsiaNews explains the consequences of climate disinformation for Indigenous communities in Thailand, stating that "public acceptance of these narratives allows authorities to adopt increasingly severe measures, including criminalization

through restrictive laws, intimidation, and even physical violence against these groups" (n.d.). In other words, climate disinformation fosters an environment in which the state can implement repressive measures against Indigenous peoples. Given that similar patterns have occurred historically for Indigenous communities worldwide, it is reasonable to infer that these dynamics are also present in Latin America. Unfortunately, the perspective of the predominantly urban population tends to be considered "correct," both because they hold the majority of positions of power and because Indigenous peoples are a minority, often physically and socially distant from urban centers.

Contextual framework

This section will address the social, historical, and geographical context of the disasters. It is important to note that the information collected comes from official sources rather than media reports. Additionally, it draws on previous fieldwork conducted in the locality, verifying the situation following the spill.

Oil extraction in the Peruvian Amazon

Oil extraction in Peru emerged as a central component of the country's strategy for economic growth and development, reflecting the strategic importance attributed to hydrocarbons. The industry experienced its major expansion in the 1970s following the discovery of oil wells in the Amazon, particularly in the Corrientes River basin, by the state-owned company Petroperú (Chirif, 2010). This development was further accelerated by the construction of the Norperuvian Pipeline (ONP), initiated in 1974 and completed in 1978. The ONP stretches across much of the Peruvian Amazon from east to west, crosses the Andes Mountains, and terminates on the northern Peruvian coast in the Piura department.

After 14 mostly American oil companies began exploratory activities in the region, only Petroperú and the private company Occidental Petroleum Co. (OXY) remained operating in the territory. These companies initiated exploration in Block 1AB, later renamed Block 192, and Block 8 (see Map 1) (Okamoto, 2011). Both are historically significant oil fields, being among the most productive in the country. At its peak, Block 192 alone accounted for 50% of oil extraction in Loreto. Currently, Petroperú is promoting its reactivation despite Indigenous resistance, given the government's failure to honor agreements (Infobae, 2024).

Compared to sectors such as agriculture, livestock, and forestry, which contributed 6.3% to GDP, and the mining sector, with 9.1% between 2007 and 2021, oil production in the

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can be considered relatively low, accounting for only 1.6% of GDP. However, its importance for fiscal revenues is greater, representing 6% in 2020. Regarding the significance of the Amazon as a hydrocarbon extraction zone, its production has historically been comparable to that of the northern coast, corresponding to the departments of Tumbes and Piura, along with the blocks in the continental shelf. Between 2011 and 2022, the Amazon accounted for 35.5% of total oil production, the northern coast for 44.16%, and the continental shelf for 20.35%. These figures indicate that the Amazon contributes a substantial share of total crude production, in addition to being the only region where heavy crude is found, whereas in other regions the crude is considered light (Viale, 2024).

Figure 1

Hydrocarbon blocks in Peru, indicated in green, and the route of the Norperuvian Pipeline (ONP) marked in yellow.

Source: Perupetro.

Oil spills in the Amazon

Despite the significant economic benefits for the country, such as attracting foreign investment, the long-term negative consequences are borne by Amazonian Indigenous peoples, whose territories are partly occupied by hydrocarbon blocks (Sullares, 2011). They are the ones who face the effects of numerous spills that damage their lands and undermine their quality of life. In this regard, what is promoted as a tool for the country's economic development is, in reality, for the directly affected communities a mechanism of impoverishment and rights violations, as their main sources of income, fishing and agriculture, are severely impacted. Additionally, adverse consequences include threats to their health and lower academic performance among children (León et al., 2024; Espinosa, 2016).

Since the Supervisory Agency for Investment in Energy and Mining (OSINERGMIN) began recording oil spill emergencies in 1997, according to the report *La sombra de los hidrocarburos* prepared by the Hydrocarbons Impacts Working Group of the National Coordinator of Human Rights (CNDDHH), a total of 1,462 oil spills had occurred by May 2023. It is important to note that the majority of these incidents took place in the Peruvian Amazon (831) and, secondly, along the coast (609), which also has a high presence of oil operations. Of these, 707 spills occurred in the Loreto department and 566 in Piura. This distribution reflects the number of hydrocarbon blocks in each department, indicating a concentration of this resource in these regions. Another notable figure is the annual frequency of spills, which has increased since 2006–2007. Evidence of this upward trend can be seen in 2020, 2021, and 2022, when 133, 136, and 181 spills were recorded, respectively. Currently, it is likely that the number has exceeded 200 spills per year.

A more specific figure relevant to the case addressed in this study is the total number of spills that have occurred along the ONP route. According to the primary source, Petroperú, there have been 94 incidents between 2014 and May 2025, "of which 79 were caused by third parties, 12 by natural forces, 2 by equipment failure, and 1 by material failure" (n.d.). The relevance of the cause "caused by third parties" will be discussed further below.

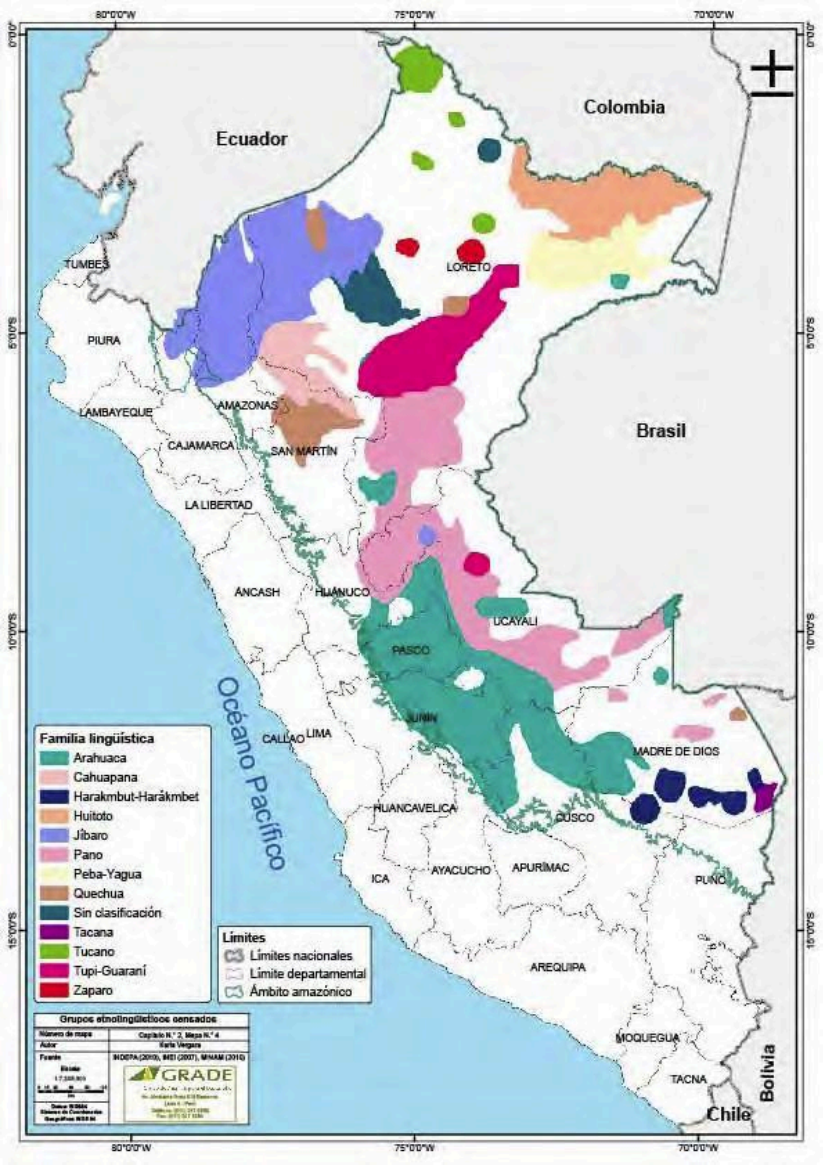
The Kukama Kukamiria Indigenous People of the Lower Marañón

The Kukama Kukamiria Indigenous community is one of the 60 ethnic groups in the Peruvian Amazon, and their language belongs to the Tupi-Guarani linguistic family (Barrantes & Glave, 2014). Over 800 years ago, they were located between the Paraguay and Paraná rivers and the Atlantic coast. From there, they began migrating to areas of the Upper Amazon, the Lower Huallaga, Pastaza, and Marañón, which constitutes their main territory. Although in smaller numbers, Kukama communities are also found along the Tigre, Urituyacu, and Huallaga rivers. According to the 2017 national census, 10,762 people

self-identified as part of the Kukama Kukamiria people. However, the actual number, according to the Ministry of Culture, is estimated at around 37,053 people.
Like many Amazonian Indigenous peoples, they were also subjected to various authorities, serving as domestic workers or laborers on estates in exchange for education, protection, and evangelization. Additionally, their involvement during the rubber boom between 1880 and 1914 is notable. In the 1970s, at the beginning of oil exploitation in the country, they were employed as laborers in urban areas.
It is important to note that their primary economic activity is fishing, not only because it is their main source of income due to its commercialization thanks to their location near the rivers, but also because of its ancestral connection to their beliefs. Fishing appears in their origin myths, through the hero Ini Yara, or the "great fisherman" in the Kukama language, as well as in the collective memory of the community across generations (Mincul, n.d.). In this way, the water resource is a crucial part of their worldview, as their cosmos is divided into three realms: the earth, the sky, and "the world of water." The latter is paramount, inhabited by mythological aquatic beings such as yacurunas, bufeos, mermaids, and the water people (Grados & Pacheco, 2016). The water people are considered guardians for those living on land. Due to oil spills, these beings have been dying in the river, which directly affects the memory and spiritual life of the Kukama Kukamiria people.

Regarding the Kukama Kukamiria community in the locality of Cuninico, in the Parinari district, it is located eight hours by canoe from the nearest city, Nauta, which in turn is two hours away from the capital of Loreto and the largest city in the Peruvian Amazon, Iquitos. The community is composed of 130 families, totaling approximately 300 people. Following the spill, 66% of the community's food basket derived from natural resources has been put at risk. Consequently, they are now more vulnerable to food insecurity, which in turn reduces their quality of life (Alfaro, 2022). This issue is increasingly affecting various populations across Peru, many of them due to events linked to climate change and other environmental factors.

Figure 2



Geographic area of residence of language families in 2007. Source: INEI, Second Census of Indigenous Communities of the Peruvian Amazon, 2007

The 2014 Oil Spill in Cuninico

This was the first spill experienced by the native community of Cuninico, located in the Cuninico River basin, one of the tributaries of the Marañón River, which in turn feeds the great Amazon River. The communities of San Francisco, Nueva Santa Rosa, and Nueva Esperanza were also affected. On June 22, 2014, 2,358 barrels (99,036 gallons) of oil were spilled. As a result, it has been described as one of the largest spills in the Amazon

(Ancieta & Morvelli, 2024). The incident reportedly began at kilometer 41+833 of Section I of the ONP.

Subsequently, the community members became aware of the spill due to its effects on the taste of their fish, the presence of oil stains in the water, and dead fish. It is important to note that the community immediately alerted Petroperú; however, a temporary clamp was not installed at the pipeline rupture until July 2 (Alfaro, 2022). As a result of this lack of action, a complaint was filed with the Environmental Assessment and Oversight Agency (OEFA) for noncompliance with environmental management, damage to flora and fauna, and potential harm to human life and health.

In this way, Petroperú was sanctioned under the PAMA for failing to carry out maintenance actions and for noncompliance with its Contingency Plan, which establishes the series of measures to be taken in the event of disasters both at company facilities and in the specifically affected area (Ancieta & Morvelli, 2024). According to Petroperú (n.d.), its current Contingency Plan consists of the following stages: initial environmental remediation, main environmental remediation, final environmental remediation, and environmental and social assessment. At that time, the following actions were implemented: containment and recovery of the spilled oil, as well as cleaning and remediation of the affected areas. This plan was in effect from July 2014 to March 2015. Between July and September of that period, the communities also received food supplies from Petroperú.

At the end of the period for implementing the Contingency Plan, the proposed items were not fully completed. For instance, the transportation of contaminated material reached 93% completion, while the restoration of the affected area had not even begun (0%). In this regard, OEFA declared Petroperú administratively responsible for the spill and again granted a six-month period to rectify its actions (Ancieta & Morvelli, 2024).

The 2022 Oil Spill in Cuninico

On September 16, 2022, eight years after the first disaster and without having fully recovered from it, a new spill struck the same locality, this time at kilometer 42+350 of the ONP. Crude oil flowed into the Cuninico ravine for nine hours before being stopped. In this way, it reached the Marañón River, where more than 100 Indigenous communities were affected. Immediately, in addition to Cuninico, the localities of Urarinas, San Pedro, Nueva Esperanza, Maypuco, and Santa Rosa in the Urarinas district were also impacted. It is important to note that in September 2022, this was the third spill registered and associated with the ONP (DAR, 2022).

The National Institute of Civil Defense (INDECI) reported that the response and rehabilitation actions included sampling by the National Water Authority (ANA) as part of emergency environmental monitoring on September 21. Subsequently, the Ministry of Energy and Mines (MINEM) reported that on September 20, Petroperú had provided humanitarian assistance to the native community of Cuninico in the form of 100 boxes of 20 liters of water. The following day, an additional 272 boxes of water, along with the same number of food packages, were delivered. Furthermore, 34 barriers were installed to stop the flow of crude oil, and cleanup operations began.

Regarding the testimonies provided, the community leader Mariluz Canaquiri, the current recipient of the 2025 Goldman Environmental Prize, stated that she had not received any prior notice of the spill from Petroperú that would have allowed her to collect as much water as possible before the crude reached their communities. Subsequently, OEFA reported that Petroperú concluded the incident had affected 5 hectares and involved 2,500 barrels. Finally, it is also important to note that the Loreto department was declared in a state of emergency on September 25 by the Ministry of Environment (MINAM) (Mongabay, 2022).

Objectives

The objectives of this research are to analyze the discourses found in digital news articles from both traditional and alternative media covering the two oil spills in the Cuninico ravine (2014 and 2022).

By examining the discourses in both types of media, it is expected to identify contrasting narratives that may reflect perceptions of the events, whether in favor of Indigenous peoples, the oil company, or even taking an impartial stance. Subsequently, the study will explore how these narratives, or the omission of information, play a role in climate disinformation regarding the Amazon.

According to Stecher (2009), who presents the methodological-theoretical framework of discourse analysis, power discourses are those that show indications of the social reality of the population, thereby exerting considerable influence over people's thinking. They are referred to as "indications" because discourse reflects only one dimension of social life, not its entirety. Furthermore, discourse analysis examines the relationships between language and power, revealing the mechanisms of domination in contemporary capitalist societies. In addition, it also uncovers discourses of resistance against hegemonic standards.

The perception of the Amazon in Peru is still stigmatized. As Espinoza (2016) notes, it is believed "that it is an uninhabited region with fertile lands that should be better utilized" (p. 153). Therefore, I consider that the coverage of such disasters is where polarized discourses can be found, creating divisions within the population.

Methodology

This research adopts a qualitative approach, using the content analysis method. Texts will be interpreted based on decomposition and classification (Orellana, 2022). The study starts from the premise that language is not only a means of expressing ideas but also an active factor in social reality. In this way, language is not static; it is capable of performing actions (Santander, 2011). This language becomes information that humans use to make decisions, highlighting the importance of the language employed in countering disinformation.

The sample consists of a total of 165 digital news articles from three alternative media outlets and three traditional media outlets (see Table 1 for distribution). The traditional media considered were *El Comercio*, *La República*, and RPP, while the alternative media included Servindi, Actualidad Ambiental (SPDA), and Wayka. From the total of 165 articles, a sample of 80 articles was drawn proportionally according to the number of articles found from each digital outlet. This selection was made randomly.

Furthermore, the criterion for selecting traditional media was based on data collected regarding the weekly reach of digital platforms, according to the 2024 Reuters Institute Digital News Report (see Table 2). The highest weekly usage rates were prioritized: RPP with 24%, *El Comercio* with 23%, and *La República* with 22%. The portal Peru.com was not considered because it is managed by the El Comercio Group, which already includes its main portal (Cueva, 2024).

This approach avoids potential redundancy or overlap in editorial positions across the news articles.

Table 1

Digital news outlets selected for the sample according to exclusion criteria and total number of articles considered

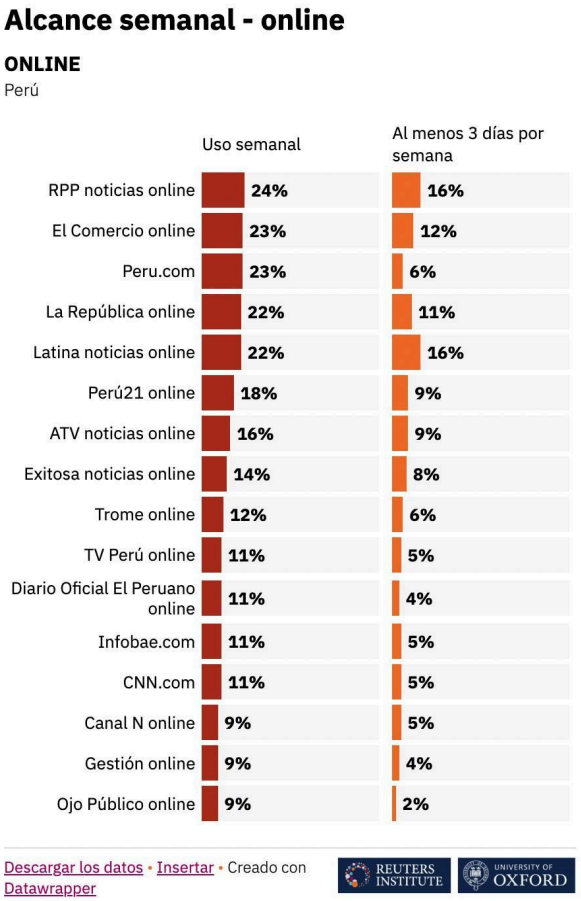
Type of digital media	**Digital outlet**	**Website**	**Total**
Tradicional	El Comercio	www.elcomercio.pe	14
Tradicional	La República	www.larepublica.pe	24
Tradicional	RPP	www.rpp.pe	31
Alternative	Servindi	www.servindi.org	69
Alternative	Actualidad Ambiental (SPDA)	www.actualidadambiental.pe	18
Alternative	Wayka	www.wayka.pe	9
Total			165

Note. The table shows the six selected digital news outlets, classified as traditional and alternative.

To select the sample units, articles were considered from the day each spill began (June 22, 2014, and September 16, 2022) and any subsequent events that occurred over the following two years. To streamline the process, the following Google search shortcut was used as a model: **“site:larepublica.pe 'cuninico'”**. This limits search results to articles from a specific website that contain the selected keyword. Considering that Cuninico is a little-known locality with limited media coverage, almost all of the articles found were directly related to the spills.

Table 2

Weekly reach of traditional digital newspapers in Peru



Fuente: Cueva (2024). Peru's Digital News Report.

To conduct the content analysis, focused on the ideas established around the oil spills in the locality of Cuninico, a quantitative organization of the information based on categories was used. This organization includes themes and subthemes addressed in the articles.

Results

Table 3

Categories	Subcategorías	Traditional media			Alternative media		
		El Comercio	La República	RPP	Servindi	Actualidad Ambiental	Wayka
Identification of responsible parties	Petroperú	1	0	0	4	1	0
	Third parties	3	7	0	3	0	0
Technical Information	Procedure	3	1	2	1	1	0
	Contingency plan	4	4	3	0	0	0
Government Statements	Structural	0	1	1	0	2	1
	Circumstantial	0	5	5	1	3	0
Spill Impact	Environmental impact	4	0	2	0	2	0
	Economic impact	2	0	0	1	0	0
	Health impact	2	0	0	2	1	2
Legal Procedures between Petroperú and the Government	Parlamento Nacional, OEFA, Juzgados, Tribunal Constitucional	3	1	0	13	1	2
Petroperú's response	Magnitude of impact	6	2	0	2	0	0
	Official reports	8	4	5	1	0	1
Direct criticism	Petroperú	1	1	1	22	4	4
	Community	0	0	1	0	0	0
	Government	5	0	1	7	1	5

Mention of the Kukama Kukamiria people	Contact with Petroperú	3	1	2	0	0	0
	Procedure	1	7	0	0	0	0
	Participation in the debate	2	15	6	10	2	1
	Resistance	3	0	6	4	0	0
	Testimonies	0	0	0	2	1	2
	Impact	1	4	6	3	4	2

Note. Table showing results regarding the number of mentions for each category.

The results show that traditional media adopt a more technical approach than alternative media, as evidenced by the higher number of mentions in this category. This information refers to the actions implemented by Petroperú upon becoming aware of the spill, both in terms of simple procedures and those aligned with its Contingency Plan.

Furthermore, there is a disparity in the identification of responsible parties: alternative media largely hold Petroperú accountable, while traditional media place responsibility on third parties. Government statements are more present in traditional media, contrasting with the coverage of Petroperú's legal procedures with the government in alternative outlets. Traditional media also highlight Petroperú's official communications regarding the physical extent of the spills. Perhaps the most notable aspect is the direct and explicit criticism of Petroperú by alternative media, particularly the digital outlet Servindi. Additionally, there is greater criticism of the government, although *El Comercio* also presents some cases.

Regarding the involvement of the Kukama Kukamiria people in the published information, both types of media present circumstances in which the community could participate in procedures and provide their opinions on legal measures. However, there is a greater focus on "life after the spill" for the affected communities when real testimonies are conveyed through alternative media. Finally, both types of media also mention the impact of the spill on the community, albeit with differences in the level of detail provided. This will be illustrated with examples.

Overall, traditional media can be seen as adopting a neutral or merely informative stance, reporting Petroperú's statements and official reports without offering an opinion. In contrast, alternative media take a clear stance in favor of the affected Kukama Kukamiria communities by including testimonies and challenging the arguments presented in

Petroperú's official statements, particularly regarding the attribution of responsibility for the spill.
That said, the following sections will detail the categories in which the greatest disparities are observed: **"Identification of responsible parties," "Technical information," "Legal procedures between Petroperú and the Government," "Direct criticism,"** and **"Mention of the Kukama Kukamiria people."** A brief description of the most notable and striking excerpts in terms of language and content for each category is provided below.

Identification of responsible parties

Responsibility for the June 2014 spill is unanimously attributed to Petroperú. However, it is possible to observe, based on the publication dates of the articles, that the resolution with the findings was issued four months after the event. This delay may reflect the slow response of state agencies in addressing environmental disasters. Furthermore, in the Servindi report, the phrase "as it has not been proven that the responsible parties were native" suggests that, during the initial four-month waiting period, it was assumed that the native communities were responsible for the spill.
In the case of the 2022 spill, the disparity is more complex. On one hand, two days after the event, Petroperú stated that it was an "intentional cut" but did not specify the actors involved. Subsequently, Galo Vásquez Silva, the *apu* of Cuninico, and the lawyer from the Legal Defense Institute (IDL) confirmed that it was caused by a third party, after a representative was accused of the incident. On the other hand, one month later, the then-Prime Minister, Aníbal Torres, directly accused the native communities of cutting the ONP for monetary gain (repairs and compensation).

"The Environmental Evaluation and Oversight Agency (OEFA) issued a directoral resolution concluding ***that Petroperú bears administrative responsibility***" (*El Comercio*, 23/10/2014).

"As it has not been proven that the responsible parties were native, ***the only plausible explanation lies in the age of the pipelines***, which has been tirelessly reported by the federations, as well as the excessive pressure they endure" (Servindi, 26/11/2014).

"According to the Environmental Evaluation and Oversight Agency (OEFA), Petroperú failed to comply with pipeline maintenance measures and is ***therefore directly responsible for the consequences of the spill***" (Actualidad Ambiental, 14/06/2016).

"According to Petroperú, the oil spill that occurred on Friday at kilometer 42 of the Norperuano Pipeline (ONP) in the district of Urarinas (Loreto), affecting the Cuninico River and reaching the Marañón River, ***was the result of an intentional cut.*** This was reported by the Peruvian company on Saturday through an official statement" (La República, 18/09/2022).

"[Galo Vásquez Silva and lawyer] indicate that the intellectual authors are 'those bad companies that incite the population to attack the pipeline in order to later benefit from remediation contracts'" (Servindi, 06/10/2022).

"'That the government has not assisted the population, that the government has not attended to the people detained by the natives. Absolutely false, because if that outlet were decent it would tell the truth: ***that some members of those native communities are the ones cutting the pipeline in order to later claim repairs and compensation,'"*** (La República, 04/11/2022).

Technical Information

Regarding the first spill, technical information is presented similarly across both types of media and even uses the same language. It is evident that both paraphrase the same official statement from Petroperú. In the case of the second spill, more instances of technical information were found. Notably, the coverage highlights the steps Petroperú took following its Contingency Plan, specifically the delivery of supplies to the affected Indigenous communities.

"Petroperú's actions include ***the placement of two containment plugs to prevent the spilled hydrocarbon from flowing into the Cuninico River*** (a tributary of the Marañón), the recovery of crude oil, the provision of water and food to the native community of Cuninico, as well as the deployment of personnel to provide medical care" (El Comercio, 09/07/2014).

"In response to the event, OEFA highlighted that Petroperú had initiated the following actions: ***the placement of two containment plugs to prevent the spilled hydrocarbon from flowing into the Cuninico River*** (a tributary of the Marañón), crude oil recovery actions, the provision of water and food to the native community of Cuninico, and the deployment of personnel to provide medical care" (Actualidad Ambiental, 09/07/2014).

The Ombudsman's Office urged Petroperú to take immediate measures in response to the new oil spill reported today at kilometer 55 of the Norperuano Pipeline, which is already

affecting the Marañón River. ***The autonomous agency stated in a communiqué that it is necessary to "identify the spill site, contain the oil, remediate the area, and assist the affected native communities"*** (Servindi, 16/09/2022).

Company personnel arrived at the site and installed a metal clamp to contain the hydrocarbon. ***The company will temporarily provide food and water to the affected communities*** (El Comercio, 17/09/2022).

Petroperú announced that it will temporarily provide food and water, coordinating with local authorities. ***This aims to assist the populations of neighboring communities in a supportive and preventive manner in response to the environmental contingency.*** Additionally, the company emphasized that, in line with its social management policy, it ***prioritizes dialogue with communities to carry out the tasks*** it is responsible for promptly during such contingencies (RPP, 17/09/2022).

"As reported, after containing the crude oil leak with the installation of a metal clamp, containment barriers were placed at the mouth of the Cuninico River, at the confluence with the Marañón River, with 19 barriers installed so far. Their main function is to prevent the displacement of hydrocarbons. ***These actions are carried out in accordance with Petroperú's Contingency Plan"*** (La República, 18/09/2022).

The oil company has also delivered water and food supplies to eleven communities considered affected by the crude oil spill, including the native community of Cuninico. However, due to this blockade of river traffic on the Marañón River, ***it will not be possible to continue with the scheduled deliveries, which affects the residents of the native communities*** (RPP, 20/11/2022).

Legal Procedures of Petroperú with the State

In both spills, there is a clear reproduction of the official discourse provided by the resolutions of OEFA as well as the Constitutional Court. However, what stands out is the level of detail regarding the measures taken, which is more often reported by alternative media such as Servindi, along with opinions on these actions, mostly expressing disagreement.
"According to OEFA, Petroperú committed various violations: *failing to comply with the Environmental Management and Adaptation Program* (PAMA) by not performing maintenance actions at kilometer 41+833 of the Norperuano Pipeline; failing to comply with the Contingency Plan by not detecting or controlling in time the spill that occurred at

kilometer 41+833 of Section I of the Pipeline, thereby releasing oil into the environment and causing actual damage to flora and fauna and potential harm to human life or health" (El Comercio, 30/09/2015).

"The Environmental Evaluation and Oversight Agency (OEFA) sanctioned Petroperú with a fine of 2,578.30 UIT (S/. 10,184,285 soles) for failing to remediate the areas impacted by the spill [...]" (Actualidad Ambiental, 27/06/2016).

"The OEFA resolution of February 15, 2016, following the corresponding proceedings, ***ordered Petroperú to immediately carry out maintenance on sections of the Norperuano Pipeline that had not yet been affected***, to replace damaged pipeline segments, and to prepare a report to the Ministry of Energy and Mines detailing the environmental impacts identified after the spills. All of this was mandated as a preventive measure" (Wayka, 21/07/2017).

1. Environmental remediation.
   OEFA established the administrative responsibility of Petroperú for failing to provide maintenance to the Norperuano Pipeline, for causing actual damage to flora and fauna, and for posing a potential risk to human health. OEFA therefore ordered Petroperú to remediate the affected area.
2. Health and compensation for the spill.
   The claim requesting healthcare assistance for those affected by the spill was upheld in two judicial instances and is currently in the enforcement stage of the ruling.
3. Maintenance of the Norperuano Pipeline.
   A writ of amparo was filed by FEDEPCUM and Indigenous communities against Petroperú's ***refusal to conduct maintenance on the Norperuano Pipeline.*** This claim was rejected by the Mixed Court of Nauta and by the Civil Chamber of Loreto, and is currently pending a final decision before the Constitutional Court. (Servindi, 01/03/2019)

"The Constitutional Court ordered Petroperu to compensate the Indigenous communities of Cuninico, San Francisco, Nueva Esperanza, and Santa Rosa, affected by the oil spill that occurred in their territories in 2014. [...] ***To date, Petroperu has refused to compensate*** the communities affected by the Cuninico spill. Finally, it should be noted that this ruling is historic, ***as through it the Constitutional Court reaffirms its precedent on the possibility of protecting rights through the constitutional compliance process***, in

this case, the conventional right to receive compensation for damages caused as a result of extractive activities." (Servindi, 01/05/2021)

Direct criticism

In both oil spills, it can be said that alternative media outlets frequently present direct and explicit criticism toward Petroperú, various state entities, or government authorities. This criticism is expressed through the journalist, but more often through the voices of Indigenous representatives themselves. At first glance, traditional media appear to adopt a neutral stance; however, the language used deserves closer examination.
Overall, the criticism focuses on the slow response by Petroperú and institutions such as the Ministry of Health, which reflects a lack of concern from the State regarding the situation. Additionally, alternative media highlight false accusations against Indigenous representatives, as well as a lack of clarity about the amount of oil spilled in the area.
Experts estimate that at least 10,000 barrels of oil escaped from the old and poorly maintained pipeline. This is the largest ***spill ever recorded in our country, but for Petro-Perú it is as if nothing had happened.*** (El Comercio, 07/22/2014).

Given everything mentioned above, several questions arise, one of them related to what was said by the Minister of Energy and Mines, Eleodoro Mayorga. ***According to the official, it will take ten days to clean up the spilled crude. He made this announcement on July
21. Is it really possible to fulfill this promise when there is no consensus on the magnitude of the damage?*** Are they not playing with the expectations of the communities by making this type of statement? Has the company already identified the cause of the spill? (Servindi, 07/26/2014).

The Apu of the Cuninico community, Watson Trujillo, reported that Petroperú offered to pay community members to clean the area affected by the spills ahead of next week's visit by the Inter-American Commission on Human Rights (IACHR). ***The spills occurred more than two and a half years ago***. Now that they know the IACHR will be in Cuninico, and with only a week left before they arrive, ***only now do they want to clean the area***, Trujillo said (Servindi, 02/15/2017).

The people of Cuninico also ***claim that the Ministry of Health's response has not gone beyond toxicological tests.*** Seven years have passed since the spill, and they have not received specialized medical care for heavy metals exposure. (Wayka, 07/21/2019)

Impunity regarding actions that contaminate or degrade territories is a form of violence and contempt for the life that these impacted territories sustain. Without environmental compensation (physical, biological, and social), reparation, investigation, and sanctions for the individuals or institutions responsible (in compliance with regulations), ***this institutionalized disregard by the State becomes immunity in favor of those who pollute***; those who show contempt toward territories, bodies, ecosystems, and, ultimately, toward life itself, a life they ignorantly fail to value and consciously reject. (Wayka, 09/21/2022)

Another demand is humanitarian aid. Petroperú delivered 272 food packages to Cuninico. The other communities have not yet received any, said Chiroque, ***who also highlights inconsistencies in the weight of the food supplies provided.*** (La República, 09/30/2022)

Although it may be difficult to admit, ***attempts to evade responsibility for the maintenance of the North Peruvian Pipeline (ONP) and to incriminate Indigenous leaders know no bounds.*** This is evident in the accusations against Galo Vásquez Silva, president of the Federation of Cocama Peoples of the Marañón (Fedepcum), ***who has allegedly attacked the ONP*** in order to benefit from remediation work. (Servindi, 10/06/2022)

However, the high-level commission made up of officials from various State institutions ***was unable to reach the area*** due to the temporary shutdown of operations at Jorge Chávez International Airport, caused by an accident that left two people dead. Although a new date was proposed to resume dialogue, the leaders refused. They also stated that they would continue their protest by blocking navigation on the Marañón River. ***As a result, Petroperú called for reflection, urging that the blockade be avoided so that cleanup and remediation efforts in the Cuninico River can resume.*** (RPP, 11/20/2022)

Despite a meeting being scheduled for Saturday, November 19 in Nauta, the representative from the PCM, Gustavo Bustamante, informed of a new date because, due to the accident at the Jorge Chávez airport, the High-Level Commission would not be able to arrive. ***The Indigenous communities state that the government delegation could have arrived on a military plane*** or on the helicopter that takes President Pedro Castillo to his home in Cajamarca. (Servindi, 20/11/2022)

The highest court adopted this decision ***after identifying an "omissive conduct" by Petroperú regarding the maintenance it is responsible for providing to the ONP***, thus causing damage to the environment and to the health of communities. Although

Petroperú committed to following a schedule of actions to maintain the ONP, ***it has been determined that there are mandates partially fulfilled, pending, and even some unfulfilled, they indicate.*** (Servindi, 01/08/2024)

Mención del pueblo Kukama Kukamiria

Ambos tipos de medio incluyen al pueblo Kukama Kukamiria en sus noticias, ya sea informando que se trata de la población afectada o incorporando sus declaraciones respecto al accionar de Petroperú y del Estado. En esta categoría destacan ***La República y Servindi.*** La diferencia radica en la profundidad del tratamiento: mientras los medios tradicionales suelen limitarse a algunas líneas que describen el impacto o recogen breves opiniones, los medios alternativos dedican artículos completos a la voz de los representantes indígenas e incluso a testimonios de madres afectadas, poniendo en primer plano la experiencia humana y cotidiana de las comunidades tras el derrame.

Alfonso López, president of the Association of Kukama Indigenous Peoples (Acodecospat), explained that one ton of rice was delivered to the community of Cuninico for 500 people, ***with the notice that this amount was meant to last only one week.*** (Servindi, 07/26/2014)

Indigenous leader Wrays Pérez, who met with the IACHR delegation, ***questioned Minister Tamayo's denial of any impact on human health in Loreto as a result of the oil spills.*** He told *El Comercio* that the affected Indigenous people brought samples of contaminated water and soil to officials of both the IACHR and the Peruvian government. (*El Comercio*, 07/10/2017)

In her memory, Liceña Oblitas also holds the story of two pregnancies that barely reached three months before ending in heavy bleeding, with the fetus falling to the ground like a ripe fruit from between her legs. Her first seven children, born before the year of the oil spill in Cuninico, completed nine months of pregnancy without complications and through natural deliveries. After 2014, any attempt at life died inside her. (*Wayka*, 02/13/2018)

"They have requested to participate in the development of the plan. We have a meeting scheduled tomorrow with their representatives, and on Wednesday we will carry out work to review and plan one of the proposed actions," stated Percy Minaya, director of DIRESA, yesterday to the Loreto newspaper *La Región*. (*Wayka*, 08/28/2019)

The Legal Defense ***Institute highlighted the involvement of male and female leaders***, as well as Indigenous mothers from these communities, including Flor de María Paraná, Loydi

Macedo Mozombite, Monica Kikube Canaquiri, and Maria Pacaya Sifuentes. (*La República*, 01/06/2021)

"We have nothing to do with whether there was a cut or not — that is outside the territory of Cuninico. It is 2 km from where we are living. (…) Before this pipeline, we didn't need to constantly ask the authorities to provide us with food to eat; we didn't have to bother them about water or food. But now, with this spill that is happening, we are in this situation," he said. (*RPP*, 02/19/2022)

Despite Petroperú's conclusion, prior to the public prosecutor's investigation, the truth is that according to the legal adviser and Indigenous leader of the Federation of Peoples Affected by Oil Activity, José Fachín, Petroperú's ***statement stigmatizes Indigenous peoples by claiming that the pipeline cuts are intentional, and seeks to discredit their platform's struggle agenda.*** (*La República*, 09/18/2022)

At least 15 communities in the districts of Urarinas and Parinari, in the Loreto region, do not have access to water for food preparation and hygiene after the oil spill at kilometer 42 of the Norperuvian Pipeline —operated by the state-owned company Petroperú S.A.—reached their main source: the Marañón River. (*La República*, 09/22/2022)

According to the affected party, their vessel was seized by local residents while navigating the Marañón River near the town of Cuninico. ***It was there that several protestors boarded the boat with spears, arrows, among other weapons, and forced the crew to stop.*** As a result, the victims cannot leave the vessel. (*La República*, 09/26/2022)

This mijano season (1), a central period for artisanal fishing, which is a crucial means of subsistence for the communities, as well as one of their few sources of income— ***has been severely affected***. This spill is not an isolated event. The communities of the Parinari district have suffered the negative impacts of oil activity for five decades. However, they have not received a single benefit. (*Servindi*, 10/01/2022)

Indigenous community representatives stated that they began this indefinite strike, in coordination with the four federations of the Corrientes, Tigre, Marañón, and Pastaza river basins, ***because the State has not addressed the needs of their Indigenous communities.*** They emphasized that they will remain mobilized until a high-level commission visits their territories, and that the protest will not be lifted. (Servindi, 10/10/2022)

When asked about the time it would take to remediate the affected areas, the ***leader questioned that workers of the state-owned company claim that this will only take a few months.*** In Cuninico they said the cleanup would take 10 days. A year and a half has passed and traces of oil are still being reported. When asked about the time it would take to remediate the affected areas, ***the leader questioned that workers of the state-owned company claim that in only a few months the contaminated areas will return to what they were before.*** "It is impossible that the entire area will be remediated in three months (...), the community is upset because Petroperú keeps lying," he asserted. (Servindi, 20/10/2022)

"That's why we have mobilized again. ***The only form of protest we have is to block traffic on the Marañón River***. Maybe that way they will listen to us, because it is a fair claim," he noted. According to what he said, the protest action, which began at zero hours this Thursday, is indefinite. (La República, 11/04/2022)

Discussion

In this section, the analysis of the media discourses identified will be addressed based on the characteristics of disinformation explained in the introduction.

Returning to Table 1, it is stated that alternative media present greater coverage of the event, with 96 articles compared to 69 from traditional media. We can compare this figure with the sample of the study by Orellana (2022), where the object of study was the oil spill at the La Pampilla refinery in the Ventanilla sea, near Lima. The sample consisted of 162 news articles, only from traditional media such as *El Comercio*, *La República*, *RPP* and *Trome*. This data reflects the coverage focus that traditional media give to events that occur in the capital or near it, even when dealing with the same type of event and in the same year.

Likewise, it is possible to affirm the priority focus that alternative media take regarding the event in the Amazon. Particularly, the digital media outlet Servindi (69 articles), which specializes in "promoting intercultural dialogue on topics of Indigenous and environmental interest" (Servindi, n.d.).

In connection with the identification of those responsible for the spill, it is observed that there is a narrative of blame towards the Kukama Kukamiria people, specifically in the 2022 spill, where it was officially declared that the event was caused by an intentional cut to the ONP carried out by third parties (*El Comercio*, *La República*, *RPP*, 09/17/2022).

The central problem in the communication of traditional media in this case is that they provide a superficial coverage of a central axis of the event, which is its cause. This point

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is

validated because it is by knowing those responsible that actions can be taken, whether to contain the spill or to provide the corresponding assistance to the affected communities. The more time passes without taking action, the more the crude oil spreads. This happened in this case, since there was no response from Petroperú for one day even after having received the alert.

A superficial coverage means that they repeat Petroperú's "official discourse" without questioning the measures, which turns them into sympathizers of what was said. In this way, their news is presented as a simple informative note.

Including subtitles such as "Complaint against those responsible" and "Delivery of food and water" highly mitigates Petroperú's responsibility regarding the spill (*RPP*, *El Comercio*, 09/17/2022). In the eyes of inhabitants of urban areas, delivering food and water in this situation is seen as a positive and supportive act. However, it is an obligation of the State, since the Indigenous communities of the area rely on the river as their main source of drinking water, and access to it is a constitutional right. Likewise, the quantity of products is not indicated, since alternative media later reported that they were only sufficient for one of the six affected communities. In addition, the amount offered was not enough for the number of people for the time period estimated by the company (*Servindi*, 07/26/2014). Thus, the public perception of the depth of the impact on the communities is reduced.

In relation to the parameters of disinformation, this would be a case of omission of information, since traditional media choose to follow a generalized narrative and overlook the reality of those affected. In this sense, disinformation or, in this case, misleading information, does not only occur when false information is transmitted, but also when information is left aside.

Returning to the main narrative of the identification of those responsible, once again including the phrase "caused by third parties" mitigates Petroperú's responsibility. The problematic aspect is that it is not specified who the "third parties" are, which makes the communication ambiguous. Later in the timeline, the "third parties" are identified as members of Indigenous communities, since they are the other actors involved.

As indicated in the results, the then Prime Minister reinforced this accusation with his statements in *La República*, saying that Indigenous representatives are guilty of the cut for money. Given the context of the statement, it can be affirmed that he makes this accusation with the aim of denying the fact that the government did not assist the people affected by the stoppage of boats by the communities. Since it came from a national authority, stating it as a truth was dangerous, because in Western society the word of an authority "carries more weight" than that of an Indigenous person.

These are statements that people in urban areas are not going to question by themselves, because they are not familiar with the living reality of Indigenous peoples. How would an Indigenous person make a cut in the pipeline that would contaminate their only source of drinking water? Would they be capable of harming their entire community, knowing that they are a collective culture, for an amount of money? These are questions that allude to individual morality; however, the first answer would be negative. Currently, they themselves are experiencing the consequences of every spill that has taken place. They know that crude oil does not easily disappear from their territories, and that is why there are so many groups fighting for an Amazon without fossil fuels. Money, on the other hand, is temporary.

Concretely, in the articles of alternative media, Indigenous representatives deny these accusations at least three times.

The first statement is made by the president of the Federation of the Kukama Peoples United of the Marañón (FEDEPCUM), Julio Arirua Nashnate, who comments, "We have nothing to do with whether there was a cut or not; that is outside the territory of Cuninico. It is 2 km from the territory where we are living." (Servindi, 09/19/2022). By using "we" he considers all Indigenous people of the affected communities free from involvement.

The second statement is made by Galo Vásquez, the apu of Cuninico, who argues the rejection of the prime minister's statements "because we only have machetes, axes and arrows to survive. We don't have anything to cut a pipe of that magnitude." (RPP, 11/04/2022). It is a valid argument, since he refers to the means to carry out the act. In addition, he points to the prime minister's lack of knowledge about the communities' way of life. It should be emphasized that this rejection was reported by a traditional media outlet, which is surprising, although throughout the record RPP has shown itself sympathetic to Indigenous communities. However, it still aligns with the reproduction of official discourses. As Ivars (2021) argues in his study, it may be a medium that adopts a "multiform" stance. That is, it adjusts the information it transmits to its own convenience. To confirm this, a deeper analysis focused on this medium alone would be necessary.

The third statement rejecting the prime minister's accusations is also made by Galo Vásquez, based on a study he conducted with the Legal Defense Institute (IDL): "those bad companies that instigate the population to attack the Pipeline in order to later benefit from remediation contracts" (Servindi, 10/06/2022). In this case, he continues to deny the accusations against the communities, but he adds an interesting piece of information: the existence of third-party companies that carry out bad practices through the population.

In this sense, he is revealing a kind of mafia behind the oil spills. In the same way, the most

affected always end up being Indigenous peoples, and for the same reason: receiving money in exchange.

In addition, in the same article the apu of Cuninico puts forward a more forceful cause than the prime minister's baseless accusations: the lack of maintenance of the pipeline, whose responsibility lies entirely with Petroperú. He supports this position by stating that half of the spills occur for this reason. In fact, this was the official cause declared for the first spill in 2014, which resulted in a fine of 10 million soles for Petroperú (Servindi, 10/06/2022).

This narrative aligns with the "Distract" tactic of disinformation, since those who are initially accused later accuse the accuser. In this case, Petroperú and State authorities accuse the Indigenous communities when they are the first to raise the alert and demand justice for the event that occurred. The roles are subtly reversed and end up delaying the implementation of measures that would benefit the affected communities. The reasoning makes sense when one knows the large amount assumed due to the responsibility for the first spill compared to the lower cost invested in the repair of damages from a spill. The spills caused by the ONP could be avoided if maintenance were carried out, but it is cheaper to place barriers in the rivers and provide "solidarity" aid to the Indigenous communities.

Conclusion

- Traditional media (*El Comercio*, *La República* and *RPP*) reproduce the official discourse of Petroperú and national authorities without questioning them when addressing the central axis of the event: its cause. In this way, they present their news as a mere informative note, since it is a superficial coverage.
- Alternative media present greater coverage of the event than traditional media, which reflects the priorities in their media agenda. In addition, there is a greater priority given to events that occur near the capital than in remote areas of the Amazon.
- The emphasis of traditional media on the delivery of food to the affected communities by Petroperú conceals the complex consequences of the spill, since it has been reported that even 10 years after the spill the communities still do not have full access to drinking water in their rivers. The delivery of food for a few weeks or months does not solve the problem, but rather reduces the public perception of the severity of the social impact.

- The discourse transmitted by traditional media that accuses Indigenous communities of being responsible for the pipeline cut in the 2022 spill is discouraged by the lifestyle of the communities. It is unlikely that of their own will they would harm the wellbeing of their entire community in exchange for money. This type of discourse continues to deteriorate the perception that city dwellers have of Indigenous populations.
- The coverage recorded reflected two types of disinformation. The first was the omission of information, which makes the impacts of the spill on Indigenous communities invisible. The second was the "Distract" tactic, which places the accusatory gaze on Indigenous communities and not on the State-owned company.
- Since only two events were analyzed and with a small sample of articles, it is not possible to generalize Petroperú's attitude regarding oil spills; however, it shows an initial forcefulness that may give rise to future research. It is recommended to carry out investigations focused specifically on language, as well as headline analysis, which could provide more perspectives on the issue.

References

- https://geoportal.perupetro.com.pe/home/
- Ancieta, W. y Morvelli, V. (2024). *Un daño irreparable y continuo: Caso Oleoducto Norperuano.* Sociedad Peruana de Derecho Ambiental (SPDA). https://spda.org.pe/publicacion/un-dano-irreparable-y-continuo-caso-oleoduct o-norperuano/
- Alfaro, K. (2022). Reconocer el daño. Una valoración económica del derrame de petróleo en las comunidades nativas de Cuninico, San Francisco, Nueva Santa Rosa y Nueva Esperanza. Instituto de Defensa Legal. Oxfam. https://peru.oxfam.org/lo-ultimo/publicaciones/valoracion-derrame-en-cuninic o
- Barrantes, R. y Glave, M. (2014). *Amazonía peruana y desarrollo económico.* Instituto de Estudios Peruanos (IEP). https://hdl.handle.net/20.500.14660/601
- Bongiovanni, L. (2025). 'Dañan el clima': la última mentira contra las poblaciones indígenas tailandesas. *Pime Asia News.* https://www.asianews.it/noticias-es/Da%C3%B1an-el-clima:-la-%C3%BAltima-m e ntira-contra-las-poblaciones-ind%C3%ADgenas-tailandesas-64114.html
- Chirif, A. (2010). *Petróleo y pueblos indígenas de Loreto: una visión histórica.* https://www.actualidadambiental.pe/wp-content/uploads/2011/11/Petr%C3%B3leo -y-PPII-visi%C3%B3n-hist%C3%B3rica-Alberto-Chirif.pdf
- Climate Action Against Disinformation [CAAD]. (s.f.). *What is misinformation and disinformation?* https://caad.info/what-is-misinformation-disinformation/
- Espinosa, O. (2016). La Amazonía peruana a principios del siglo XXI. *En El Perú en los inicios del siglo XXI. Cambios y continuidades desde las Ciencias Sociales.* (pp. 153
  - 167). CIUDAD DE MÉXICO. Universidad Nacional Autónoma de México-UNAM.
- Derecho, Ambiente y Recursos Naturales. (2022). Derrame de petróleo golpea nuevamente zona de Cuninico en Loreto.

- https://dar.org.pe/derrame-de-petroleo-golpea-nuevamente-zona-de-cuninico-en-loreto/
- Grados, C. y Pacheco, E. (2016). El impacto de la actividad extractiva petrolera en el acceso al agua: el caso de dos comunidades kukama kukamiria de la cuenca del Marañón (Loreto, Perú). *Anthropologica del Departamento de Ciencias Sociales,* XXXIV(37), 33-59.
- https://doi.org/10.18800/anthropologica.201602.002
- Infobae (2024). *Lotes 192 y 8 de Loreto podrían no volver a producir: comunidades anuncian paro en rechazo a incumplimientos del Gobierno.*
- Instituto Nacional de Defensa Civil [INDECI]. (2022). *Derrame de hidrocarburos en el distrito de Urarinas - Loreto.* https://portal.indeci.gob.pe/wp-content/uploads/2022/09/REPORTE-COMPLEMENTARIO-N%C2%BA-7516-21SEP2022-DERRAME-DE-HIDROCARBUROS-EN-EL-DISTRITO-DE-URARINAS-LORETO-10.pdf
- Ivars, P. (2018). *GAS Y PETRÓLEO: DISPUTAS SOCIOTERRITORIALES Análisis del discurso del diario Río Negro en los conflictos por extracción de hidrocarburos no convencionales en la ciudad de Allen en 2015.*

[Tesis de bachiller inédita] Universidad Nacional del Comahue. https://rdi.uncoma.edu.ar/bitstream/handle/uncomaid/16540/Ivars%20Rodr%c3%adguez%20Pablo.%202018.%20An%c3%a1lisis%20del%20discurso%20del%20diario%20R%c3%ado%20Negro%20en%20los%20conflictos%20por%20extracci%c3%b3n%20de%20HNC%20en%20All en.pdf?sequence=1&isAllowed=y

León et al. (2024). *La sombra de los hidrocarburos. Informe III sobre emergencias ambientales, pasivos, procesos de remediación entre los años 1997-2023 en el Perú y reflexiones sobre alternativas energéticas.* Coordinadora Nacional de Derechos Humanos. (CNDDHH). https://cooperaccion.org.pe/wp-content/uploads/2024/08/La_sombra_de_los_hidroca

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r buros-2024.pdf

- Ministerio de Cultura (s.f.). *Kukama Kukamiria.* https://bdpi.cultura.gob.pe/pueblos/kukama-kukamiria
- Sierra, Y. (2022). Perú: líderes ambientales denuncian abandono e inacción del Estado por los derrames de petróleo. Mongabay LATAM. https://es.mongabay.com/2022/10/lideres-ambientales-denuncian-abandono-p or-derrames-de-petroleo-peru/
- Okamoto, T. (2011). Enclave extraction and unruly engagements: Oil spills, contamination and the Cocama-Cocamilla indigenous people in the Peruvian Amazon. [Tesis de maestría inédita]. Norwegian University of Life Sciences. https://nmbu.brage.unit.no/nmbu-xmlui/handle/11250/187802?show=full
- Orellana, L. (2022). *Representaciones discursivas en medios periodísticos digitales sobre el derrame de petróleo en Ventanilla durante enero y febrero de 2022.* [Tesis de maestría inédita] Universidad Federico Villareal. https://repositorio.unfv.edu.pe/bitstream/handle/20.500.13084/8642/PI2022_1412_CS_IF.pdf?sequence=1
- Petroperú (s.f.) *Oleoducto Norperuano: Estadísticas.* https://oleoducto.petroperu.com.pe/plan-contingencia/estadisticas/
- Petroperú S.A. (s.f.). Plan de contingencia. https://oleoducto.petroperu.com.pe/plan-contingencia/
- Santander, P. (2011). Por qué y cómo hacer Análisis de Discurso. Cinta moebio 41: 207-224 .
- Sullarrés, A. (2011). Antropología después de Bagua. Movimiento indígena, políticas públicas y conocimiento antropológico. en Chaumeil, J. ; Espinosa, O. y Cornejo, M (Eds.), *Por donde hay soplo. Antropología Amazónica en los Países Andinos.* Pp. 122-156. Lima: Instituto Francés de Estudios Andinos.
- Valverde, K. (2024). Percepción de los líderes y lideresas indígenas de la Amazonía Peruana sobre su representación en los medios de comunicación.

[Tesis de licenciatura]. Universidad Peruana de Ciencias Aplicadas.

https://repositorioacademico.upc.edu.pe/bitstream/handle/10757/674050/Valverde_CK.pdf?sequence=2&isAllowed=y

- Viale, C. (2024). Petróleo en la Amazonía peruana: Análisis económico del futuro de los hidrocarburos en un contexto de transición energética global. Natural Recource Governance Institute (NRGI). https://resourcegovernance.org/sites/default/files/2024-01/Petro%CC%81leo%20en%20la%20Amazoni%CC%81a%20Peruana_NRGI_2024.pdf

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Project Saguaro: Natural Gas Megaprojects and Propaganda

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TABLE OF CONTENTS

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Climate Action
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Abstract

In the report on online disinformation related to the Saguaro Project, we analyzed the types of disinformation narratives that emerged around the project between 2023 and 2025, based on a qualitative analysis of YouTube videos and Facebook posts.
A search was conducted using relevant keywords on YouTube and Meta's Ad Library. The keywords included natural gas, transitional gas, Plan Sonora, Sierra Madre pipeline, Gulf of California pipeline, Saguaro Project, Mexico Pacific Limited, and Saguaro Project. The content was coded according to its stance toward the project, the mention of project partners, the main type of narrative, narratives targeting activists, disinformation rhetoric, and type of framing.

The content was later analyzed in three distinct time periods:
1. Announcement of the Saguaro Project (July 2023 – September 2024)
2. Whales or Gas? Campaign (October 2024 – July 2025)
3. Impacts and Delays in the Saguaro Project (August 2025 – October 2025)
This report is based on the methodology proposed by Manzoni et al. (2025) in their study *"Gaslighting: Disinformation on the Energy Transition in Latin America and the Caribbean."*

The key findings can be summarized as follows:

Disinformation about the Saguaro Project and the Natural Gas plants in Sonora shows that on Facebook, 43% of the 134 posts analyzed contained disinforming narratives, predominantly misleading and delay-oriented, focusing on economic benefits, job creation, and the energy transition. The main sources of this content were government accounts (48%), followed by spam accounts (24%) and content creators (20%), with a framing that was primarily economic and driven by human-interest angles.
On YouTube, out of 120 videos analyzed, 39% (47 videos) contained disinformation narratives, 82% of which were misleading, emphasizing clean energy, energy security, and emissions reductions. The main authors of this content were news media outlets and content creators, and the dominant framing focused on economic consequences (79%).
Across both platforms, we observed a strategic communication effort aimed at legitimizing the project as part of the energy transition, despite its reliance on fossil fuels, downplaying environmental impacts by portraying the fossil gas project as a climate solution.

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Introduction

The Saguaro–Sierra Madre energy project has been announced as one of Mexico's most important natural gas initiatives by fossil fuel companies and the Mexican government, highlighting its economic potential and benefits for the energy sector. The project involves the construction of a terminal for the transportation, reception, liquefaction, and export of liquefied natural gas (LNG) (Techint, 2024), which includes the installation of Saguaro Energía LNG for the export of LNG from the west coast of North America, with a capacity of 15 million tons per year, located in Puerto Libertad, Sonora (Mexico Pacific, n.d.).

It also includes the proposed 800 km Sierra Madre Pipeline, which will serve as the main supply route for natural gas from the U.S.–Mexico border, crossing 16 municipalities in the states of Chihuahua and Sonora (Mexico Pacific, n.d.).

In July 2023, former President Andrés Manuel López Obrador announced the partnership between the National Electric Commission (CFE) and the company Mexico Pacific Limited, highlighting in a video that the project responds to the growing global demand for natural gas and mentioning that investments have been made to ensure the lowest possible environmental impact. However, various organizations have expressed concerns about the project's environmental impacts, particularly emissions during the production and transportation of natural gas, including methane emissions (ICM, 2024; MAREA, n.d.), as well as the impact on the marine ecosystem due to vessel traffic and noise pollution (MAREA, n.d.).

During 2024, a campaign was consolidated to denounce the adverse effects of the energy megaproject and advocate for its cancellation. This campaign achieved media coverage and established itself as a significant movement, informing the public about the project's impacts and creating a counter-narrative regarding one of the current fossil fuel megaprojects.

While environmental activists and organized civil society groups are creating informative narratives about this project on social media, in the press, and in public spaces, disinformation narratives regarding fossil fuels continue to spread through political and

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economic actors associated with the project, replicating misleading discourses.

This research project presents a case study that allows for the analysis of how disinformation narratives behave in relation to an energy project. The research questions that guided the study were: To what extent are government messages about the project based on facts, and to what extent are they misleading? Who are the media reporting on this issue and what are they saying about the activists? Is there any strategy to counter the "Whales or Gas" campaign? The main objective of this research is to identify the types of disinformation narratives that emerged around the Saguaro Project during 2024–2025, based on a qualitative analysis of YouTube videos and Facebook posts.

The specific objectives are:

- To analyze the types of narratives about natural gas that emerged during this period;
- To analyze the narratives promoted by stakeholders of the Saguaro Project during this period;
- To identify the narratives that emerged concerning the activists.

To achieve these objectives, a qualitative analysis was conducted on YouTube videos and Facebook posts published between July 2023 and September 2025. The data was organized into types of discourse and types of framing: the former to categorize explicit falsehoods as well as subtler forms of disinformation, and the latter to analyze not only what is communicated but how it is communicated and for what purpose.

Literature review

Disinformation

Disinformation refers to misleading, false, inaccurate, manipulated, or deceptive content created, presented, and deliberately disseminated by relevant actors to undermine the existence of climate change impacts and the need for urgent climate action; it implies intentionality in its creation and propagation, distorting climate realities, weakening support for climate policy and solutions (Lewandowsky, 2012; United Nations, 2021; Climate Action Against Disinformation, 2023). Disinformation operates within a broader ecosystem of information disorder, where partial truths, out-of-context content, and fabricated narratives coexist, confusing audiences (Del Fresno García, 2019).

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Natural Gas vs. Fossil Gas

Natural gas is a fossil fuel that is intensively used in various sectors of the global economy, and electricity generation is one of these sectors (ICM, 2024). According to the Energy Information Administration (2024), the combustion of natural gas produces fewer carbon dioxide (CO2) emissions compared to the combustion of coal or petroleum derivatives. The extraction and transportation of gas generate methane (CH_4) leaks, a greenhouse gas 86 times more potent than CO_2 over 20 years (Union of Concerned Scientists, 2014). According to the Intergovernmental Panel on Climate Change (IPCC), CH_4 has contributed approximately two-thirds more to global warming than CO_2, with the energy sector being one of its main sources of emissions (IPCC, 2023). This inevitably implies stopping the burning of fossil fuels. In the case of gas, the International Energy Agency (IEA, 2021) sets 2035 as the deadline for its elimination from the electricity sector.

Disinformation about natural gas can constitute a specific problem within climate disinformation, as it is framed within disinformation about the energy transition. According to Manzoni et al. (2025), one of the most common disinformation narratives about the energy transition is that fossil gas is a "transition fuel". Fossil gas, frequently called "natural," has historically been promoted as a transition fuel toward a cleaner energy future. Like any effective narrative, it contains a portion of truth: gas emits less carbon dioxide than coal or oil, but that is only part of the story. Thus, these narratives can deny, distort, or delay the need to abandon fossil fuels, promoting false solutions, such as natural gas, appealing to frameworks of security, sovereignty, or economic development to justify the continuation of the fossil fuel model. This narrative is repeated transversally across all coverage of the energy transition, where gas is promoted as a cleaner or necessary option to achieve a renewable energy model.

However, Manzoni et al. (2025) mention that not all promotion of fossil fuels constitutes disinformation as it is possible to explicitly promote the expansion or continuation of their use without containing false, misleading, or manipulative claims; where the discursive normalization of the fossil fuel model and the hegemonic and naturalized narratives in media discourse legitimize the continued use of the fossil fuel model, which goes beyond disinformation.

Saguaro project

According to the Mexico Climate Initiative (2024), the Saguaro project is one of the projects being developed in Mexico and corresponds to the natural gas liquefaction plant in Puerto Libertad, Sonora, which also aims to build a pipeline connecting natural gas production in the United States with the plant and the Asian market. This plant, also known as the Mexico Pacific Limited: Saguaro Energía project, seeks to process 15 million tons per year (Mtpa) of natural gas in three liquefaction trains. The owning company is Mexico Pacific Limited, LLC.

The project has a precedent in 2006 when the construction of a natural gas regasification plant was authorized; later, in August 2024, the project received authorization to be modified and converted into a liquefaction plant (Semarnat, 2025). The project considers a partnership with CFE, which will supply 40% of the natural gas. The plant is expected to be operational by 2028, when it will begin fulfilling purchase agreements with Shell, ExxonMobil, Guangzhou, and Zhejiang Energy (Mariano, 2024).

In July 2023, the Federal Electricity Commission (CFE) and the company Mexico Pacific Limited signed an agreement for the construction of a pipeline and a liquefaction plant in Puerto Libertad, Sonora. The project was announced with an investment of 13 billion dollars and the creation of 13,000 direct jobs and 20,000 indirect jobs (Mariano, 2023). According to the official accounts of President Andrés Manuel López Obrador, there is a growing global demand for natural gas. It is also stated that CFE will not incur debt nor absorb all costs, but will provide 40% of the natural gas required by the plant for exports, and Mexico Pacific Limited commits to investing in social works in the 16 municipalities through which the pipeline will pass in Chihuahua and Sonora (Mariano, 2023).

The ASEA received notification of an amparo lawsuit, along with other additional lawsuits, which have halted the construction of the liquefaction plant. Until these legal processes are definitively resolved, the initial 2006 authorization remains under litigation before the Federal Judiciary and is currently sub-judice (Semarnat, 2025).

According to the Mexico Climate Initiative (2024), emissions throughout the production and use of natural gas, including its transportation both on land and at sea, and its liquefaction, show that gas production presents the most significant component of the carbon footprint, mainly due to CH4 emissions. Liquefaction and maritime transport

represent other important sources of GHG emissions. The project is significant because it will be necessary to find alternatives that halt the expansion of fossil fuel use or promote the accelerated development of carbon-free energy sources.

MAREA (n.d.) describes in its study that the main impacts of the project would be collisions caused by the increased marine traffic, with collisions posing a risk of death for whales; the impact from dredging the seabed; noise pollution that threatens marine species and their socialization, behavior, and risk of deafness; its contribution to climate change. The construction of fossil gas terminals and the transportation of LNG by ships will contribute to methane gas emissions, as well as leaks during production, transportation, and storage.

The Ministry of Environment and Natural Resources (Semarnat) reported in March 2025 that the current administration has not issued authorization for the Saguaro project, which includes authorization for the construction, equipment, use, exploitation, or operation of a private port facility intended for the handling of liquefied natural gas in Puerto Libertad, Sonora.

Month/Year	Theme	Source
July 15, 2023	Announcement by Andrés Manuel López Obrador of the signing of the contract between CFE and Mexico Pacific Limited	Energy & Commerce Government of Mexico
November 2023	Signing of an agreement between Mexico Pacific and the State of Chihuahua for the construction of the Sierra Madre Pipeline	Government of Chihuahua
December 2023	Mexico Pacific awarded Technit E&C a contract to carry out site preparation for temporary facilities	Techint E&C

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February 2024	Second work order of the project for site preparation by Techint E&C	Techint E&C
August 2024	Energy Regulatory Commission (CRE) authorizes the open season procedure for Transportadora de Gas Sierra Madre and Saguaro Energy Plant SENER reports mention the Sierra Madre Pipeline	Juárez, 2024 Government of Mexico, Ministry of Energy, 2024
January 2025	"Whales or Gas" demonstration in Mexico City	Whales or Gas
February 2025	Senate presentation of Point of Agreement in the Senate ASEA issues recommendation	Senate of the Republic, 2025
March 2025	"Whales or Gas" demonstrations in Santander	Navarro, 2025
April 2025	Point of Agreement by the Environmental Commission of Congress Amparos and lawsuits to revoke authorizations and prevent project progress	Senate of the Republic, 2025
June 2025	Loss of project momentum due to internal conflicts (changes of investors and executives, errors in obtaining permits)	Institute for Energy Economics and Financial Analysis, 2025 Clark, 2025

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July 2025	Request for extension for start of operations until 2032	Oil & Gas Magazine, 2025

Amid concerns about the environmental impacts of the project during 2023, the “Whales or Gas” campaign was consolidated, consisting of more than 30 environmental and Mexican civil society organizations that have managed to position their narrative against the Saguaro Project by communicating the project’s impacts and its effects on the marine ecosystem. This campaign has established press releases, digital campaigns, peaceful protests, calls for citizen action, and research on the impacts.

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Methodology

The research focused on two social media platforms: YouTube and Facebook. These platforms were selected because, according to INEGI (2021) in its National Survey on Availability and Use of Information Technologies in Households (ENDUTIH), WhatsApp, Facebook, Instagram, Messenger, and YouTube are the most popular social networks among Mexicans, including youth (Statistics from the International Youth Day, INEGI, August 10, 2022).

Facebook was chosen as it is the most used social network (excluding messaging apps), and YouTube was the only platform on the list that is not part of Meta's networks. Content from July 2023 was included, taking as the starting point the announcement of the CFE and Mexico Pacific agreement for the collaboration on Saguaro Energy, and October 2025, to enable a comparison of the narratives constructed across three distinct periods:

1. Announcement of the Saguaro Project (July 2023 – September 2024)
2. "Whales or Gas" campaign (October 2024 – July 2025)
3. Impacts and delay in the Saguaro Project (August 2025 – October 2025)

In the search for YouTube videos, filtering was performed using eight keyword phrases: natural gas, transition gas, Plan Sonora, Sierra Madre pipeline, Gulf of California pipeline, Saguaro Project, Mexico Pacific Limited, and Saguaro Project; these keywords were relevant for searching content related to the project.

In the first search for Facebook posts, the same eight keywords were used to search content in the Meta Ad Library, and the search was segmented by the regions of Sonora, Chihuahua, Baja California, and Baja California Sur, as these are the states where the projects will be installed or where environmental impacts from the plant and pipelines will occur. A second content search was conducted, in which public accounts of the project partners and stakeholders were analyzed specifically. These included ExxonMobil Mexico and CFE Nacional, being the only partner accounts with advertisement content.

The information was coded according to its stance regarding the project, the mention of project partners, the main type of narrative, narratives about the activists, disinforming discourse, and type of framing.

The information was organized in Excel tables, and descriptive statistics were used for its analysis. The results were presented in tables and graphs.

Misleading discourse

For this research, the typology of disinforming discourses was adapted based on the study by Manzoni et al. (2025), who provide five categories to identify explicit falsehoods as well as more subtle strategies of narrative manipulation. They are as follows:

Type of narrative (Discourse)	Definition – Manzoni et al., 2025	Adapted definition
Delay-oriented	They seek to avoid or reduce support for energy transition policies, emphasizing supposed costs, risks, or unfeasible timelines.	They seek to avoid or reduce support for energy transition policies, emphasizing supposed costs, risks, or unfeasible timelines.
Denialist	They deny the existence of anthropogenic climate change or the need for an energy transition.	They deny the existence of anthropogenic climate change, the need for an energy transition, or the negative effects of fossil fuels and megaprojects.
Misleading	They manipulate or take data and arguments out of context to justify continued dependence on fossil fuels.	They manipulate or take data and arguments out of context to justify dependence on natural gas and fossil fuels, highlighting the positive benefits of megaprojects and associating them with other terms.
False	They spread manifestly false information about the costs, impacts, or feasibility of the energy transition.	They spread false information about the costs, impacts, or feasibility of the energy transition.

Conspiratorial	They link the energy transition to supposed global conspiracies, undermining its social and political legitimacy.	They link the energy transition, climate change, and opposition to megaprojects to global conspiracies, undermining their social and political legitimacy.

Disinformation framings

To analyze disinforming discourses, the framing model by Semetko and Valkenburg (2000) was used, in order to analyze and understand not only what is said in disinformation but how it is said. The model proposes five types of framing:

Type of framing	Definition
Responsibility	A problem or issue is presented in such a way that assigns responsibility for its cause or solution to the government, an individual, or a particular group. It is used to shape public understanding of who is responsible for causing or solving key problems. However, by framing the problem or issue in terms of an event, instance, or individual rather than in terms of the broader historical context, people are encouraged to offer explanations at the individual level for social outcomes.
Economic consequences	Reports on an event, problem, or issue in terms of its economic consequences for an individual, group, institution, region, or country
Human interest	Provides a human face or an emotional angle to the presentation of an event, issue, or problem. It is known as a human impact frame.
Conflict	Emphasizes the conflict between individuals or institutions as a means to capture the audience's interest.
Moral judgment	Contextualizes the event, problem, or issue with religious principles or moral prescriptions. Moral

	frames can also be referenced indirectly, through quotes or inferences.

Four categories were defined to identify narratives about the activists:

Narrative	Description
Radicalization	Presents the activists as extremist actors or as a threat to the status quo. Protest actions are associated with irrational, violent, or vandalistic behavior.
Nationalist	Links activists as opponents of national interests, the current government, and as being against "development."
Delegitimization	Seeks to minimize and weaken the credibility of activists by raising doubts about their motivations, interests, and arguments. Their actions and words can be taken out of context, with emphasis on personal characteristics rather than arguments.
Neutral	There is no explicit mention of the activists; actions are described from an informative and descriptive perspective, without judgments.

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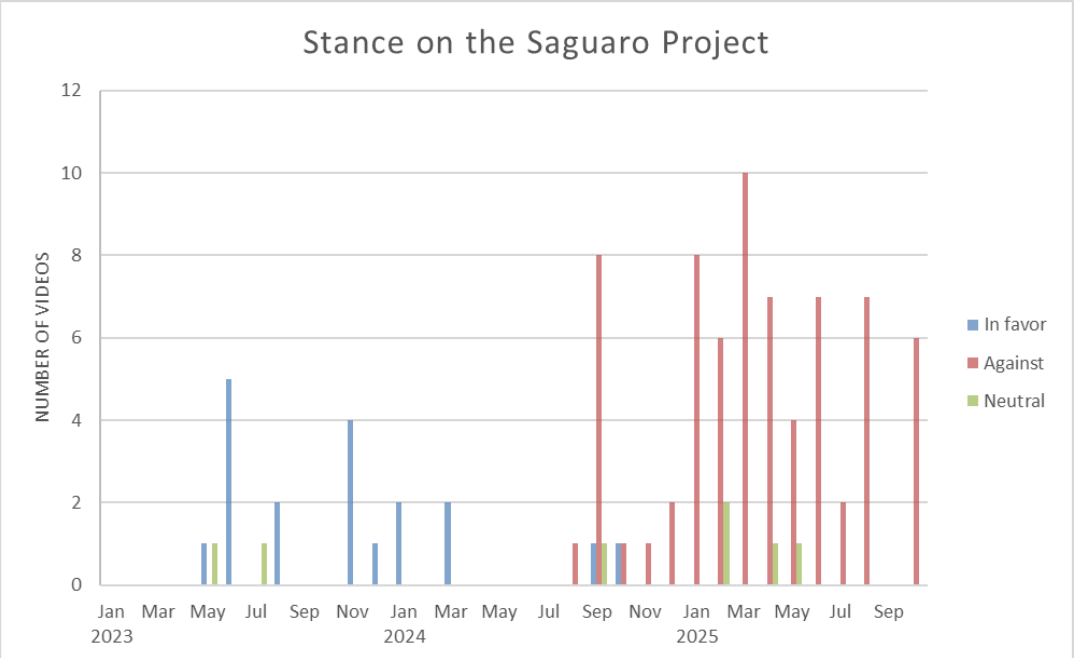
Results

1. ***YouTube***

   A total of 120 videos were analyzed. The three main narratives identified are: Project Impacts, Sustainable Energy, Transition Fuel, and Others (including development plans and benefits of natural gas).

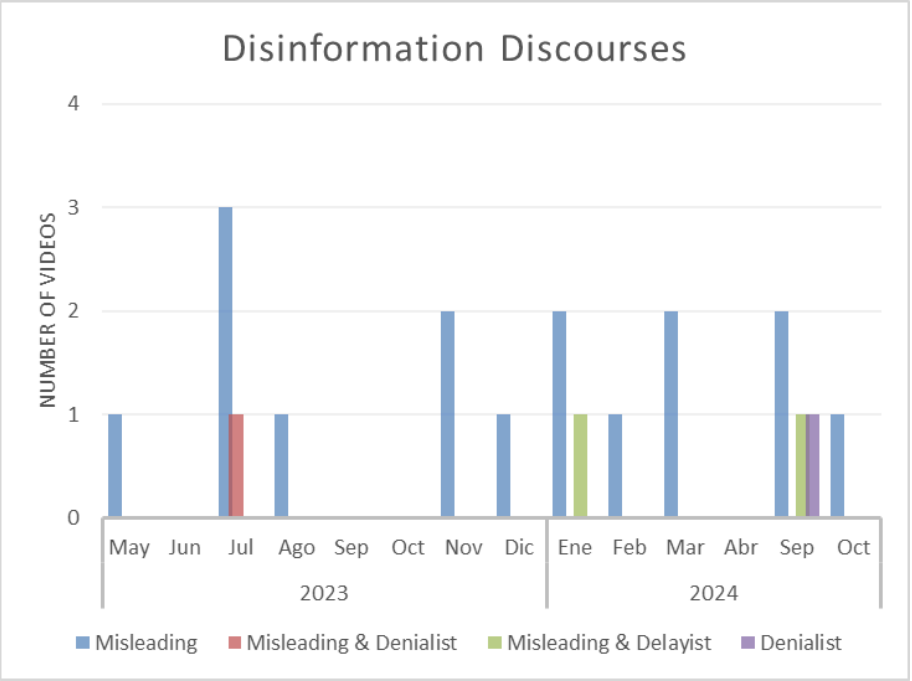
Of the 97 videos focused on project impacts, 19 videos maintained a pro-project stance, 5 were neutral, and 73 were against. Pro-project content was dispersed during 2023 and 2024, with no content in favor appearing during the campaign against the Saguaro Project.



The content of videos against the Saguaro Project falls within the narrative of the negative impacts of the megaproject, including content from the “Whales or Gas” campaign. Therefore, disinforming discourses were analyzed in 47 videos.

Disinformation on YouTube

Disinformation discourses were found in 19 of the 47 videos. The main disinforming discourse identified was the misleading narrative (82%), with smaller proportions being denialist (9%) and delay-oriented (9%). The predominant type of framing in the videos is Economic Consequences (79%) and Responsibility (21%).



The narratives within the misleading disinforming discourses were mainly associated with economic growth, clean/sustainable energy, emissions reduction, energy security, and social impact and community involvement, as well as job creation. At the same time, they repeat the same disinformation message by asserting that the project has the necessary permits, that the investment in the plant and pipelines will guarantee local gas supply, and continuously emphasize that the Saguaro Project is the most important foreign investment in Mexico's natural gas sector.

"Well, for the state of Sonora because it is indeed an impressive investment and, well, also to have the supply for us." Entre todos Digital, January 2024

"Chihuahua is one of the states with the greatest solar and wind potential in Mexico and has eight pipelines crossing its territory for national and international export. Maru

Campos stated that she will continue working on the necessary public policies so that natural gas remains in Mexico and benefits the productive sectors." Índigo Energía e Industria, December 2023

Delay-oriented discourses focus on mentioning the current government's progress on energy issues and its commitment to the environment, while emphasizing that there is fossil fuel infrastructure that supplies current energy needs and the dependence on these models because investments have already been made in this infrastructure.

"...It's a matter of resource investment, it's a matter of, let's say, commitment to climate change, the environment, and the transition we need in energy matters. But we have to be very clear, this plant is built and has the capacity to switch from diesel to gas, but I cannot convert it from gas to solar panels, wind, or marine energy; I would have to build a new generation plant, and there's no way I could remove this one from the market, because I would leave a large part of the population without electricity and power generation." Rocío Abreu, Deputy, Energy Commission, Mexico, September 8, 2025, Petróleo y Energía.

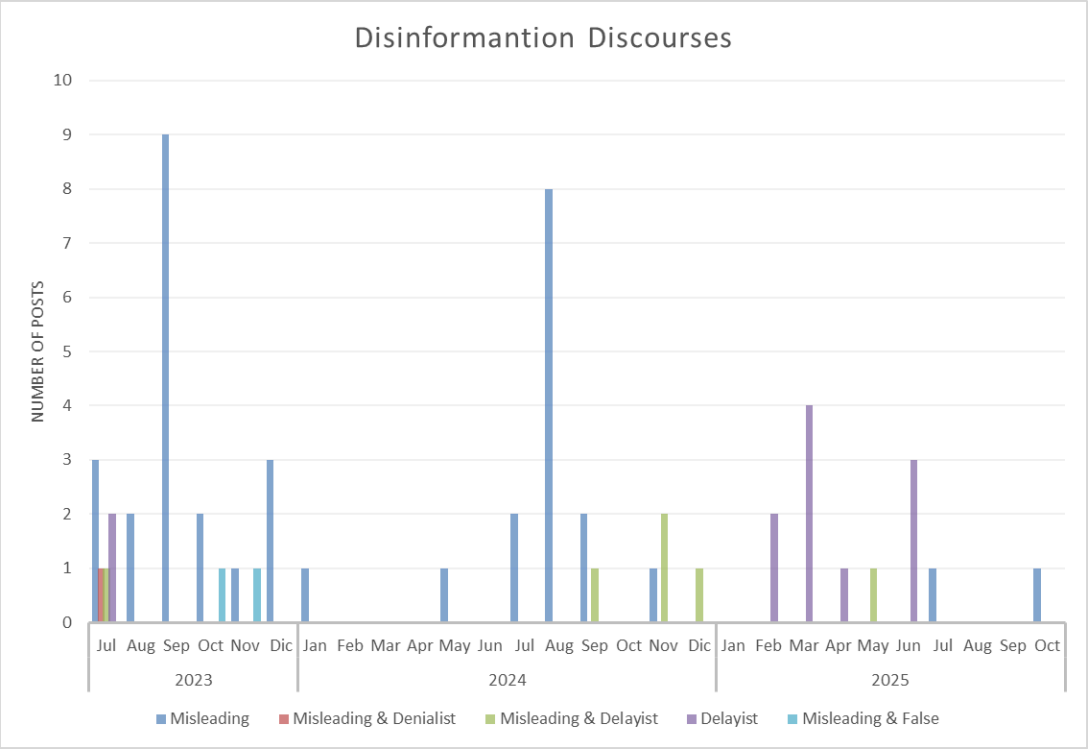
The type of authors of these discourses are: Media (8); Content Creator (6); Government (2); Other (2); Partner (1). In most of the videos, no narrative about the activists was found; only 2 videos contained delegitimization narratives, although in one of the videos it was not directed at the activists opposing the Saguaro Project, but at another territorial defense group.

"We would have to see what impact the Saguaro Project has. No, we shouldn't panic either because of any particular group. Because we don't even have information that this pipeline will affect the coasts of the Gulf of California. But well, we will stay alert." Víctor Castro Cosío, Governor of Baja California Sur. Transcript of Meganoticias La Paz video, September 2024. Example of delegitimization narrative.

2. ***Facebook***

A total of 134 Facebook posts were examined, of which 43% maintained a disinforming narrative. The main narratives were: Benefits of Natural Gas (33%), Project Impacts (24.5%), Development Plan (20%), Transition Fuel (1.5%), and Other (21%), which include technology and investment.

The predominant narratives were Misleading and Delay-oriented, with smaller proportions being False and Denialist. The most frequently observed types of framing were Economic and Human Interest. Only 8 of the 58 posts mentioned Mexico Pacific Limited, and no other project partners were mentioned.



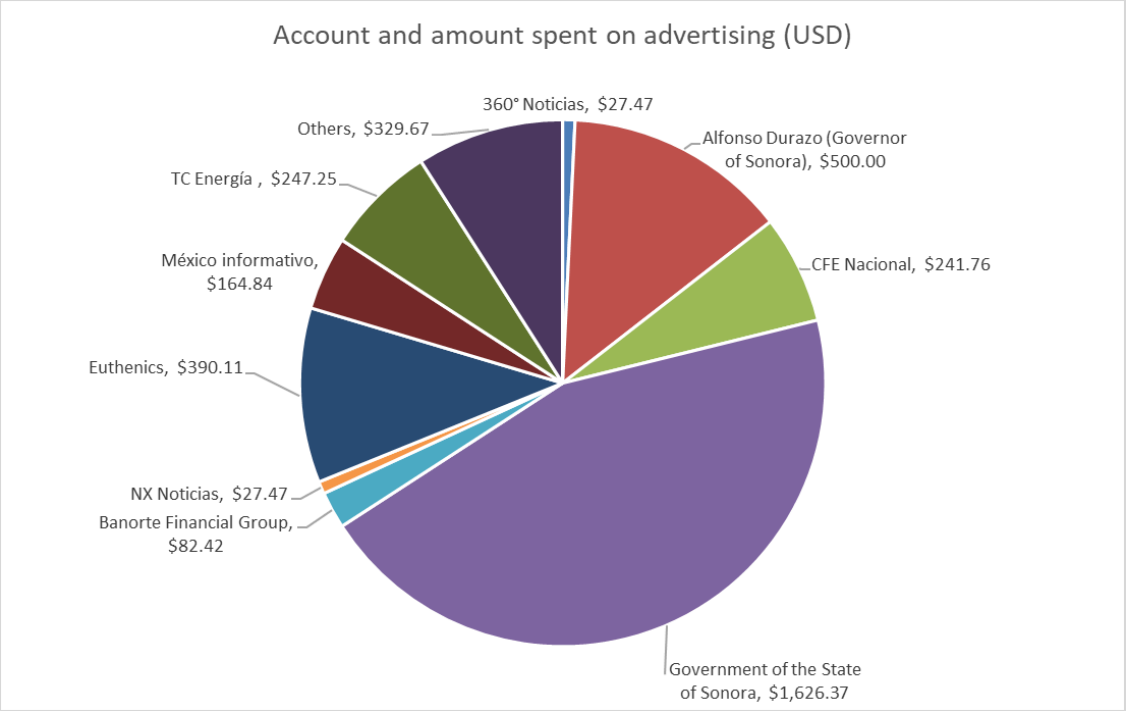
The type of authors of these discourses is divided into Government (48%) (including state governments, governors, municipal presidents, and deputies, as well as the Federal Electricity Commission); Spam Accounts[1] (24%), Content Creators (20%), and Financial Groups (6%). No narrative about the activists was found within the analyzed content. Although the study focuses on Facebook, advertising distributed on both Facebook and Instagram was also considered, as 48 of the posts were distributed on both platforms, and only 10 posts were distributed solely on Facebook. Posts exclusively on Instagram were not considered. The main type of content is Text and Video (25), Text and Image (24), and only

[1] Spam Accounts: Deceptive or fake profiles created to spread repetitive content. They may contain suspicious links, and the messages they distribute are often questionable in terms of veracity, lacking sources. These accounts are generally deleted after the period during which they have distributed announcements and/or content..

9 posts included a link to a website, podcast, or other type of content.

The users who spent the most on advertising[1] are the Government of the State of Sonora with 29,600 pesos, Alfonso Durazo, the current governor of Sonora, with 9,100 pesos, and Euthenincs, a spam account, with 7,100 Mexican pesos.

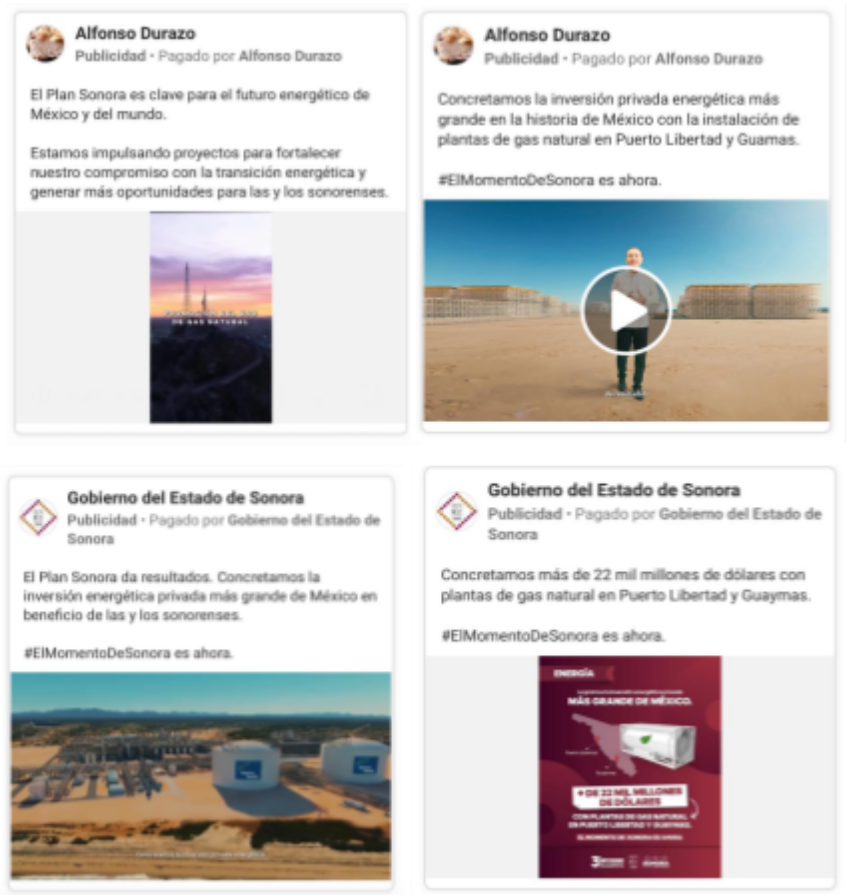
1. For the calculation of advertising expenditure, the lower amount referenced in the Meta Ad Library was used as a reference. For example, if the amount spent is listed as 500–700, 500 was taken as the reference.



Misleading narratives from the State Government

In 2023, the investment with Mexico Pacific Limited was announced, and the Economic Consequences framing was used to promote the project as a strategic action for economic growth, job creation, and the production of clean energy and energy transition. The latter occurs because the Puerto Libertad LNG plant (not mentioned as the Saguaro Project) is referenced as part of Plan Sonora, which also includes a solar plant.

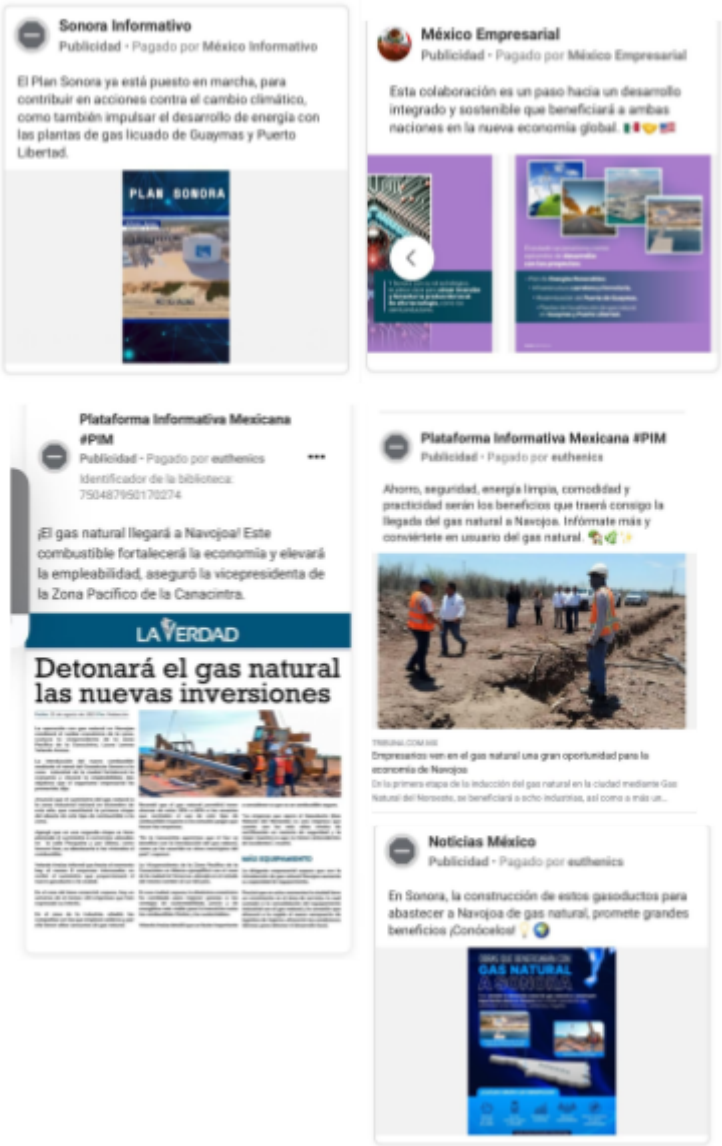
As 2024 progressed, the Puerto Libertad plant continued to be promoted as an investment that is already taking place, alongside other projects such as the Guaymas LNG plant. This is done within the framework of the annual government report.



Disinformation from spam accounts

During the Project announcement period, spam accounts emerged that not only promoted the benefits of natural gas but also the economic benefits for the State and the region of the natural gas plants in Sonora. During this period, the benefits of the Puerto

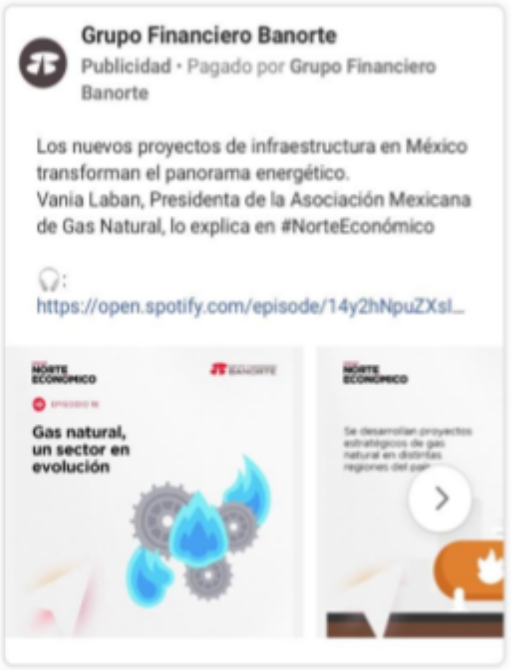
Libertad Plant (Saguaro Project) and the Guaymas Plant[2] were promoted together. It was also found that they mentioned this investment not only as an energy transition project but also as a climate change mitigation action.



[2] Guaymas Plant: A natural gas liquefaction (LNG) project that includes a port terminal and a natural gas liquefaction plant. Its purpose is to store LNG from Texas for export to Asia. The associated company is Amigo LNG.

Banorte Financial Group and Nearshoring

The spread of disinformation from the financial group arises from the promotion of natural gas investments. Although not all publications from the financial group are disinformation, some only mention the benefits of nearshoring without containing disinforming narratives.



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Discussion

Manzoni et al., 2025 found in their analysis of news articles from June 2023 to May 2024 that the most frequent disinformation narratives are delay-oriented and misleading, and the main authors of disinformation are industry and government, with the predominant framing being attribution of responsibility. The authors also mention that in Mexico, petroleum nationalism prevails, where Andrés Manuel López Obrador has justified fossil fuel expansion under the discourse of energy sovereignty. Similarly, this study found that the most frequent narratives are misleading, and state governments, also from MORENA, maintain the nationalist discourse focused on sovereignty and energy security.

Disinformation about the Saguaro Project persisted during the "Project Announcement" period, beginning in 2023 and continuing until mid-2024. The type of narrative employed is misleading, where data is manipulated or taken out of context to highlight the benefits of the LNG megaproject, natural gas, and pipelines, associating the project with economic growth, job creation, and emphasizing the amount of foreign investment in the project.
The framing of the disinformation is through the lens of economic consequences, presenting the project in terms of its economic benefits for the states where it will be developed, primarily in Sonora due to the installation of the Puerto Libertad Plant, and how investment in the project will be reflected in the country's economic growth.

During the "Whales or Gas" Campaign (September 2024 – September 2025), disinformation on YouTube decreased until it disappeared; no content was found that was specifically created to counter this campaign. From September 2024 onwards, content on this platform focused on narratives against the project, which may be due to the fact that even media outlets maintained coverage of this campaign, and neutral narratives about the project also emerged. No response to this campaign was identified during this period. During the impacts and delay of the Saguaro Project period (August 2025 – October 2025), disinformation content decreased. However, it is important to highlight that during this period, Facebook posts denouncing greenwashing campaigns for natural gas projects emerged. This could continue to be studied in the coming

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months.

Differences between disinformation on YouTube y Facebook

On YouTube, the disinforming narratives mention Mexico Pacific Limited as the main investor, the participation of CFE, and even other partners or buyers, such as Shell, as well as possible associated financial institutions like Santander. In contrast, on Facebook, the disinforming narratives mostly omit mentioning the companies. Similarly, the name of the Saguaro Project is not actively mentioned; only the Puerto Libertad Plant or natural gas project/investment is referenced, and it is associated with other natural gas megaprojects in Sonora, such as the Guaymas Plant.

On YouTube, disinformation arises in media outlets from the replication of messages from the National Government announcing the Saguaro Project, and from the Local Government when announcing Mexico Pacific Limited's investment, sometimes as an interpretation taken out of context that the gas will be for export, presenting the project as an action that will benefit local energy.

On Facebook, the main dispersion of disinformation arises from the State Government and Spam[3] accounts, which distribute the message of the investment in the Puerto Libertad and Guaymas plant as a fact, despite the fact that the former, due to injunctions, has had the permits for the works suspended. These disinformation narratives, which originate from propaganda by the State Government of Sonora, are used to promote the government, its energy policies, and their perceived positive impact on the region. The Saguaro Project (announced as the Puerto Libertad Plant) is also used on social media to generate content based on government reports.

One of the strategies within the propaganda of the Saguaro Project and other natural gas projects is to mention these natural gas initiatives and their investments alongside renewable energy projects, such as photovoltaic energy projects, in order to present them as sustainable energy projects and as part of the actions toward the energy transition.
As some authors have noted, not all information about fossil fuels and their megaprojects constitutes disinformation. Some sources merely replicate information about the projects without necessarily containing false information, simply reinforcing the normalization of fossil fuel narratives. However, it is recommended that the promotion and expansion of fossil fuels by the government be analyzed carefully, considering not only the framing but also the sociopolitical context in which the messages are disseminated. Even when such

content does not constitute explicit disinformation, when spread within a political propaganda context, it can carry a subtler form of misleading information.

This research offers some reflections on how discourses of growth and sovereignty promoted by the government are associated with fossil fuel megaprojects and how these become state propaganda, raising the question: What can be done? Betancur (2004) notes that, although the word "propaganda" has acquired a negative or pejorative connotation due to its association with control, propaganda persists as a means of maintaining a particular balance of power in favor of the message's sender (the propagandist). In this case, the propaganda of fossil fuels, natural gas, and megaprojects aims not only to sustain the status quo of dependence on fossil fuels but also to convey a positive image of the current government regarding its decisions in the energy sector.
Fossil fuel propaganda benefits the state, and the state disseminates propaganda about fossil fuels.

Hernández (2025) mentions that post-truth can be the goal of a political group, which, by systematically altering the perception of contextual facts—shaped by emotions and beliefs rather than objective facts—aims to create and influence public opinion. In this way, we encounter the post-truth of fossil gas and energy extractivist megaprojects, where false benefits are replicated and the harms of these projects are denied by comparing them to previous infrastructure. It is also where nationalist narratives of sovereignty are reproduced. These narratives, rather than informing, seek to appeal to emotion in order to continuously maintain the narrative of dependence on fossil fuels.

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Conclusion

Disinformation of the Saguaro Project is carried out through the distribution of messages that emphasize how the investment by Mexico Pacific, mentioned as the historic investment in LNG, will generate regional welfare by encouraging new jobs, promoting economic growth, reducing emissions, and minimizing environmental impact. And the benefits at the national level by mentioning that the project responds to energy demand and contributes to energy sovereignty, even though this project does not have the purpose of national energy supply, being an LNG export project, and Mexico only positions itself as an intermediary.

The narrative of fossil gas as part of the energy transition strategy prevails, continuing with the narrative that fossil gas is a transition fuel, that there is dependence on this resource for energy production in the country, while at the same time it is mentioned that gas has a lower environmental impact by producing fewer greenhouse gas emissions than the burning of fuel oil, diesel, and coal. Fossil gas as a transition fuel has allowed narratives to be replicated in which the Saguaro Project, Amigo LNG Guaymas, Sierra Madre Gas Pipelines, and other fossil gas projects in the north of the country are promoted as sustainable, clean, and safe energy projects.

Some of the limitations of this study are due to the analysis of two different platforms, which generate different types of content. While Facebook maintains short posts and videos under 2 minutes, on YouTube long videos (more than 20 minutes) were found. In addition, the Facebook analysis was limited to the posts included in Meta's Ad Library, which limited the analysis of the posts that can be found on Facebook.

To continue with the analysis of disinformation about fossil fuel megaprojects, it is suggested to carry out a quantitative analysis, comparing instances of disinformation across the various Meta platforms, as well as including an analysis of TikTok. It is also significant to investigate how disinformation is distributed among AI assistants.

For the analysis of narratives about activists, referred to in the content analyzed in this research as Environmentalists, it is suggested to delve into the accounts of content creators on environmental topics and science dissemination, to analyze how they are

perceived by others and how they interact with other accounts that reject, accuse, or contradict their position. Analyzing the comments on videos that contain content against the megaprojects may also be useful.

Recommendations

Some of the recommendations for investigating disinformation about fossil fuels or megaprojects on social media are: Conduct disinformation studies in a region or state to allow for comparative analysis between them. During this research, it is highlighted that alongside the projects in the north of the country, disinformation also emerges targeting the southeast, where other types of energy megaprojects are being carried out. Delve into the disinformation associated with the energy transition and which specific narratives are being maintained around gas as a transition fuel. Take into account that disinformation about fossil fuels is not focused on developing propaganda for a single project, whether natural gas or oil, but rather encompasses several projects developed within the framework of national and regional plans; and often these also list renewable energy projects, creating misleading narratives and sometimes without maintaining a disinformation narrative.

References

Betancur, J. G. B. (2004). La delgada línea entre la información, la desinformación y la propaganda. *Reflexión política*, *6*(12), 80-93.

Clark, W. (2025). Mexico Pacific Limited: Retrasos, conflictos y errores en el proceso de obtención de permisos frenan el mayor proyecto de gnl de Mexico. Institute for Energy Economics and Financial Analysis. https://ieefa.org/resources/mexico-pacific-limited-retrasos-conflictos-y-errores-en-el-proceso-de-obtencion-de

Climate Action Against Disinformation (CAAD). (2023). What is misinformation and disinformation? https://caad.info/what-is-misinformation-disinformation/

Gobierno del Estado de Chihuahua. (14 de Noviembre 2023) Anuncia Maru Campnoviembreio con Mexico Pacific para la construcción del Gasoducto Sierra Madre. Anuncia Maru Campos convenio con Mexico Pacific para la construcción del Gasoducto Sierra Madre | Portal Gubernamental del Estado de Chihuahua

Hernández, L. (2025). La posverdad como propósito de la técnica de desinformación. *Comunicación: estudios venezolanos de comunicación*, (209), 141-146.

Iniciativa Climática de México-icm (2024). Análisis de emisiones de GEI de ciclo de vida del proyecto de exportación de GNL, Saguaro Energía. Iniciativa Climática de México.

López, G.C. & Lakatos, S. (x) Rumores Renovables: Análisis del ecosistema en línea de las comunidades hispanohablantes que se oponen a las iniciativas de energía renovable.

Manzoni M., Tavera E., Alarcón I., Venegas N., Parra F., Rodríguez M., De la Luz C., Profeta D. & Chinchilla D. (2025) Gaslighting: Desinformación sobre la transición energética en América Latina y el Caribe. Climate Tracker América Latina.

Mariano, E. (17 de julio de 2023). CFE y Mexico Pacific Limited firman acuerdo de 13,000 mdd. *Energy & Commerce*. Energy & Commerce | CFE y Mexico Pacific Limited firman acuerdo de 13 ,000 mdd

Marino, E. (28 de noviembre de 2024). Saguaro Energía, el proyecto de GNL más importante de México. Energy 6 Commerce. Energy & Commerce | Saguaro Energía, el proyecto de GNL más importante de México

Navarro, V. (2025). Tribuna Abierta. Boicot a Santander: Ballenas o Gas. La izquierda Diario. Tribuna Abierta. Boicot a Santander: Ballenas o Gas

Secretaria de Medio Ambiente y Recursos Naturales (19 de marzo 2025). Semarnat informa que en la presente Administración no se ha emitido autorización ambiental para el proyecto Saguaro. Gobierno de México-Semarnat. Recuperado 26 de agosto 2025 de https://www.gob.mx/semarnat/prensa/semarnat-informa-que-en-la-presente-administ
racion-no-se-ha-emitido-autorizacion-ambiental-para-el-proyecto-saguaro?idiom=es
Semarnat (Fecha) Titulo del articulo de la página web.

Semetko, H. A., & Valkenburg, P. M. (2000). Framing European politics: A content analysis of press and television news. Journal of Communication, 50(2), 93–109. https://doi.org/10.1111/j.1460-2466.2000.tb02843.x

TECHINT. (16 de abril de 2024). Saguaro: el proyecto de gas natural más importante de México. Techint ingeniería y Construcción. Recuperado 16 de octubre 2025 Saguaro: el proyecto de gas natural más importante de México

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Climate Action
Against Disinformation

TABLE OF CONTENTS

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Against Disinformation

Abstract

In Uganda, particularly in Ngoma Sub-county, Ntungamo District located in the southwestern region, conversations about climate change are happening everywhere: in community meetings, on radio stations, among women's groups, in churches, in political spaces, and across social media. However, many people do not recognize that what they are discussing is climate change. They notice irregular rainfall and other environmental changes, but still struggle to link them to the broader climate crisis. At the same time, these conversations are often shaped by misinformation and disinformation. Politicians, religious leaders, and influential actors exploit cultural norms and the vulnerability of farmers to advance their interests, benefiting from climate solutions such as carbon markets, while manipulating public opinion and the democratic process.

This research seeks to understand how mis and disinformation narratives spread and how they influence farmers' participation in climate action and resilience-building. Through interviews with primarily female farmers, youth leaders, religious and cultural leaders, and elders, combined with an analysis of online content, it showcases how climate disinformation is not an abstract issue; it is actively shaping how people think, act, and respond to the climate crisis. False claims such as "Climate change nebba bazungu" (meaning climate change is a Western agenda) or "carbon markets nebiki!, nibenda kutukoloniza nk'ebiro ebyahise" (meaning: what are carbon markets? those white people want to colonize us again) create mistrust and delay action. Other narratives, such as portraying droughts as "divine punishment," replace scientific understanding with fatalism.

This research demonstrates that countering these narratives requires not only accurate information, but also trust-building, youth engagement, and communication strategies that connect with the real experiences of Ugandans, especially in the western part of the country.

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Climate Action
Against Disinformation

Introduction

Climate change shows itself in the droughts that dry our fields, the floods that wash away homes, and the shrinking pastures that leave cattle without food. Yet, in the middle of these struggles, disinformation and misinformation shape the way communities respond. Some dismiss the crisis as a foreign agenda, others lose hope because they cannot separate truth from rumor, and many believe it is a divine punishment. Even worse, politicians often exploit the situation for their own benefit. While seeking votes, they sow and amplify confusion, using climate promises as campaign tools and offering quick fixes like tree planting, without understanding or explaining climate finance mechanisms such as carbon markets.

This study seeks to ask: *How do politicians abuse climate solutions while misinforming farmers about climate change, and what are the consequences for local communities?* It also considers how cultural and religious narratives, such as framing disasters as punishment from God or ancestral spirits, further complicate adaptation. The goal is to show how disinformation undermines resilience and to suggest practical ways forward, including engaging trusted community figures such as faith and cultural leaders.

Literature review

Climate disinformation is an existential risk to many on the African continent. Researchers like Lewandowsky et al. (2020) observe that misinformation undermines people and decelerates reactions. Attacks on information integrity decrease support for effective mitigation strategies and limit effective adaptation methods that focus on protecting people and the planet.

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The implementation of climate projects is at times used by political players in Africa as a form of personal or political interest. Nhamo and Muchuru (2019), in Climate Change and Carbon Markets in Africa: Issues and Policy Implications (Springer Climate), demonstrate how carbon markets and climate finance are positioned as a kind of foreign intervention, which leads to mistrust. According to CAN-U (2025), when the benefits of such projects are not clear, communities tend to perceive them as unfair or neo-colonial. In Uganda, political leaders also exploit climate projects such as tree planting or green jobs initiatives for political gain. In this context, the urgency of the climate crisis is further compromised by misinformation and disinformation, meaning the climate action that we all so desperately require continues to be postponed—possibly to the point of never materializing.

Perceptions are also shaped by religion and culture. Jenkins et al. (2018) and Green Faith Africa (2023), in *Faith for Earth: Mobilizing Religious Leadership on Climate Change,* demonstrate that faith may inspire action but may also encourage fatalism. The droughts and floods in Western Uganda are occasionally perceived as either *kushesha kwa Ruhanga* (godly wrath) or ancestral frustrations (Muganda et al., 2022). These ideologies undermine the concept of adapting through science and, in some cases, overlap with politics when politicians present themselves as defenders of localized climate policies.

Digital media also enhances the spread of misinformation. According to BBC Africa Eye (2023) and Africa Check, Facebook, WhatsApp, and TikTok promote false information on the use of seeds, fertilizers, and weather, negatively affecting rural farmers, particularly women. As demonstrated by UNDP (2024), this intensifies soil erosion and financial loss, widening the gap between evidence-based adaptation and survival-oriented choices.

Uganda, like many other countries, is susceptible to climate disinformation through political, cultural and moral narratives --especially in rural areas, that function via trust, authority and survival.

Very little research is done on the direct impact of these stories on the farmers. This study fills this research gap by targeting Ngoma Sub-county, Ntungamo District and examining the role of political, religious and digital factors in forming the local climate action and resiliency. Highlighting how narratives are rooted in history and sovereignty debates for example framing carbon markets as colonialism. At the same time, local beliefs often interpret droughts or floods as divine punishment or ancestral anger. These explanations make it harder to link climate events to human actions and science based adaptation. This work attempts to bridge this gap by focusing on those affected directly who sit at the intersection of politics, religion and climate vulnerability daily.

Methodology

This study has been carried out using a qualitative approach. Data has been collected through one to one interviews. One on one interviews were chosen because they are more personal and allow for a connection with people, feel their emotions and get deeper, more honest stories around their lived experiences. This method helps easily draw information from them compared to questionnaires. Youth, religious leaders and farmers were selected because they play key roles that youth drive change easily, religious leaders influence, guide the community and farmers are directly affected by community and climate issues with farmers, youth leaders, religious and cultural leaders. Each group consisted of about ten participants. This report will also analyse political speeches, media coverage and social media platforms, with a focus on Tiktok and radio through a thematic analysis to identify common narratives and their effects. Special attention was put on how disinformation differs between rural farmers (who rely more on radio, churches and political rallies) and digitally active youth (who encounter misinformation on social media). For example, some of the common narratives that were identified were things such as farmers believing that “climate change is punishment from God” or that “modern seeds cause famine on radio stations” and youth being misled by exaggerated farming claims on social media and TV programs. This showed how disinformation spreads differently. Rural farmers rely on radio, churches and political rallies, while digitally active youth encounter it mainly through social media platforms and online influencers.

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Climate Action Against Disinformation

Results

1. **Farmers**

Profile: Most farmers interviewed were aged 30–60, roughly balanced between men and women though more women, primarily engaged in subsistence and small-scale commercial farming in Ngoma.

In some communities, droughts and floods are seen as punishments from gods or signs of ancestral spirits, leading people to turn away from scientific explanations. Clan leaders known as "Abamuzi" are believed to control rainfall. People still call them to "withhold rain" for ceremonies, showing how traditional beliefs continue to shape community responses.

Most people in Rukungiri expressed themselves boldly in English: "Barya bazungu bakwenda kuturya bundi bushaho n'ebyo eby'okubaita carbon markets," which directly translates to creating suspicion about global climate finance mechanisms.

Many believe that "Planting trees alone will solve everything," showing how some communities oversimplify the crisis and ignore broader adaptation needs.

2. **Youth**

Profile: Digitally active youth aged 18–30, mostly students or young entrepreneurs, accessed climate information primarily via social media (TikTok, Facebook) and online TV programs.

Youth were misled by exaggerated farming success stories or unrealistic claims about modern seeds and techniques.

Young people questioned global climate talks and felt challenged by resistance from older community members, thinking "what can a young person do?"

3. **Religious Leaders**

Profile: Pastors and faith leaders from different denominations, mostly aged 40–60, actively involved in local congregations in Kashenyi and surrounding areas.

One pastor linked unreliable rainfall to ungodly acts and quoted 1 Kings 17:1 (Elijah announces a drought). People believed this message deeply, showing how faith leaders can shape understanding of climate change through religious framing.

4. **Media**

Women farmers complained that TV and radio programs like "Obuhingi Nobullisa" exaggerated farming success stories. When they tried the same methods, results were poor, causing disappointment and loss of confidence in climate information.

Authority Figures

These narratives are being spread by political speeches, religious sermons, and local leaders. Their impact is wide since people strongly believe in these figures:

- Politicians in Ngoma encouraged people to plant eucalyptus trees and commercial crops like chili without research on soil type or rainfall. When crops failed, people lost trust and started believing leaders only use climate projects for votes.
- Religious leaders frame climate events as divine punishment, influencing both farmers and congregants.
- Traditional leaders continue practices like withholding or calling rain through ceremonies, maintaining traditional control over environmental understanding.

This shows how authority figures act as key nodes for spreading climate narratives and shaping beliefs differently across farmers, youth and religious communities.

Discussion

These findings speak of trends globally but highlight Uganda's situation where disinformation intersects with politics, religion and local struggles.

Political Manipulation

Politicians do manipulate climate solutions using tree planting –especially eucalyptus, agricultural seeds, carbon markets and subsidies –as campaign promises, while spreading misleading claims that serve their electoral interests while effectively

greenwashing. This finding came up from field interviews conducted in Ngoma subcounty, where several of the people described how politicians use environmental projects for

political visibility. One participant explained, "Planting trees alone will solve everything," showing how eucalyptus tree planting is often promoted as a complete climate solution even in their area where it killed the soils. Another respondent added that politicians promise "farm subsidies and carbon projects that will bring money to farmers," but these rarely happen after elections.

Religious and Cultural Narratives

Religious and cultural explanations add another layer of complexity. When a flood is interpreted as divine punishment or a drought as ancestral anger, it becomes harder to link those events to climate change and adaptation measures. For instance, in the field interviews in Ngoma, several community members referred to the 2019 flood that destroyed gardens and homes near River Rwizi which flows in the neighboring district Kiruhura. One elder said, "Ekyo nikyo kizibu kyaitu, Ruhanga yatukubira orubaju kubw'okugaya," meaning "That flood was God's punishment because people have become disobedient." These made it difficult for many residents to connect the such to environmental degradation or changing rainfall patterns, limiting discussion on climate adaptation and preparedness (Field Interviews, Ngoma, 2025), which beliefs are powerful because they guide daily life and decision-making, which means addressing them requires sensitivity and respect as much as scientific clarity.

Youth and Local Initiatives

The study also revealed hope: youth groups and local organizations are actively debunking false claims when they have access to tools and information. For example, Kawodi, a Women Development Initiative Chairperson, said that she receives messages on farming solutions from a TV program of "Obuhingi Nobullisa" on TV West. This shows that when such platforms are well used and information verified, they can help farmers and community members learn better and avoid false claims.

Limitations

Limitations of the study include language platforms. Much of Uganda's conversation happens in local languages, and future research should look more closely at how misinformation spreads in those spaces. Language barriers in research make it hard to moderate disinformation on social media platforms. This means that most disinformation

is actually spread by community members and actors within the community through word of mouth

Conclusion

Climate disinformation in Uganda is not background noise sometimes not realised as something affecting the community but it does. It actively shapes decisions. For example, in Ngoma, a local female farmer says that when one of the contesting politicians supplied her with maize seeds for planting, the harvest was fair. However, when she tried to plant the maize in the following season using the seeds from the harvest, no germination took place, and yet she had phased out her traditional medicine seed, which she used to plant season after season. As a result of this, she experienced a seasonal famine in her family.

This shows how political misinformation shapes agricultural decisions, policies and behaviors. For example, people largely believe it is ancestral punishment or it is the gods who are angry with them while some are completely dependent on political promises even though they have waited for over 20 years now, though there are those that have studied their soils and plants and are flourishing which is the minority.

A local youth councillor in Ngoma sub-county, still in Ntungamo district, says when one of the politicians encouraged tree planting and supplied eucalyptus trees to the people at Kashenyi parish, little did he research and know about the adaptability of this particular type of tree in this area. As the community embraced the programme with vigour, the underlying rock did not support the trees' roots to go deep, and the trees died.

According to one farmer, a mother of five in Bunyusya cell, Kashenyi parish in Ntungamo district, she confessed that after being convinced by an NGO belonging to one of the incumbent politicians to grow chili and hot pepper for income generation, the activity required regular use of herbicides and pesticides due to the hot temperature in this dry corridor area, which supports vector multiplication. When the activity did not turn out to her expectations, she decided to grow the traditional crops familiar to her. The soil on her five-acre piece of land turned out to be very infertile, and due to the overuse of the pesticides and herbicides, farming has turned out to be very costly on her farm, as she's required to purchase more fertilizer before realising fair yields.

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Climate Action
Against Disinformation

These stories show how compelling storytelling told by community leaders and farmers helps policymakers understand the realities on the ground and consult with communities on what works best before introducing any intervention. When we remain silent it risks slowing down our climate response at the very moment we need it most.

Recommendations rooted in community practices:

- Investing in climate literacy programs for youth and rural communities especially the women for example of a TV program on TV west Obuhingi Nobullisa.
- Building partnerships between media, researchers and civil society to stop false information early greatly helps the communities to have the right information with each party playing its own role from media spreading the information to researchers giving accurate information with evidence, which the civil society helps share with ease.
- Supporting negotiators and policymakers with communication tools grounded in science, but told in relatable ways is important because it helps people to see themselves in the stories.
- Expanding future research into local language misinformation and disinformation and cross-country studies across East Africa while translating the information to these different languages.